Original

Operating Instructions

agria

Two-Wheel Tractor 2500 Hydro

Briggs & Stratton Petrol Engine

- Recoil Starter Version

- Electric Starter Version

Yanmar Diesel Engine

- Electric Starter Version

Before commissioning the machine, read operating instructions and observe warnings and safety instructions.

CE

Operating Instructions No. 998 783-B 03.10

GB

Please complete:

Machine Type No.:.....
Identification No.:
.....
Engine Type:.....
Engine No.:.....
Date of Purchase:.....

For name plate, refer to page 3/fig. A/4

For engine type and number, refer to page 64/Fig. C/4 petrol engine to page 68/Fig. D/17 diesel engine

Please state these data when ordering spare parts to avoid wrong deliveries.

Only use original agria spare parts!

Specifications, figures and dimensions stated in these instructions are not binding. No claims can be derived from them. We reserve the right for improvements without changing these instructions.

This delivery comprises:

- *Operating instructions*
- *Two-wheel tractor*
- *Tool kit*

→agria - Service←
= contact your agria-workshop

see separate engine operating instructions!

Symbols

Warning – danger

Important information

Fuel

Fuel filter

Air filter

Choke

Forward

Reverse

Fast

Slow

Hydraulic system

PTO

Brake

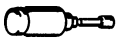
Parking brake

Closed (locked)

Open (unlocked)

Clockwise

Lifting point


Grease gun

Lubrication point

Fig. A

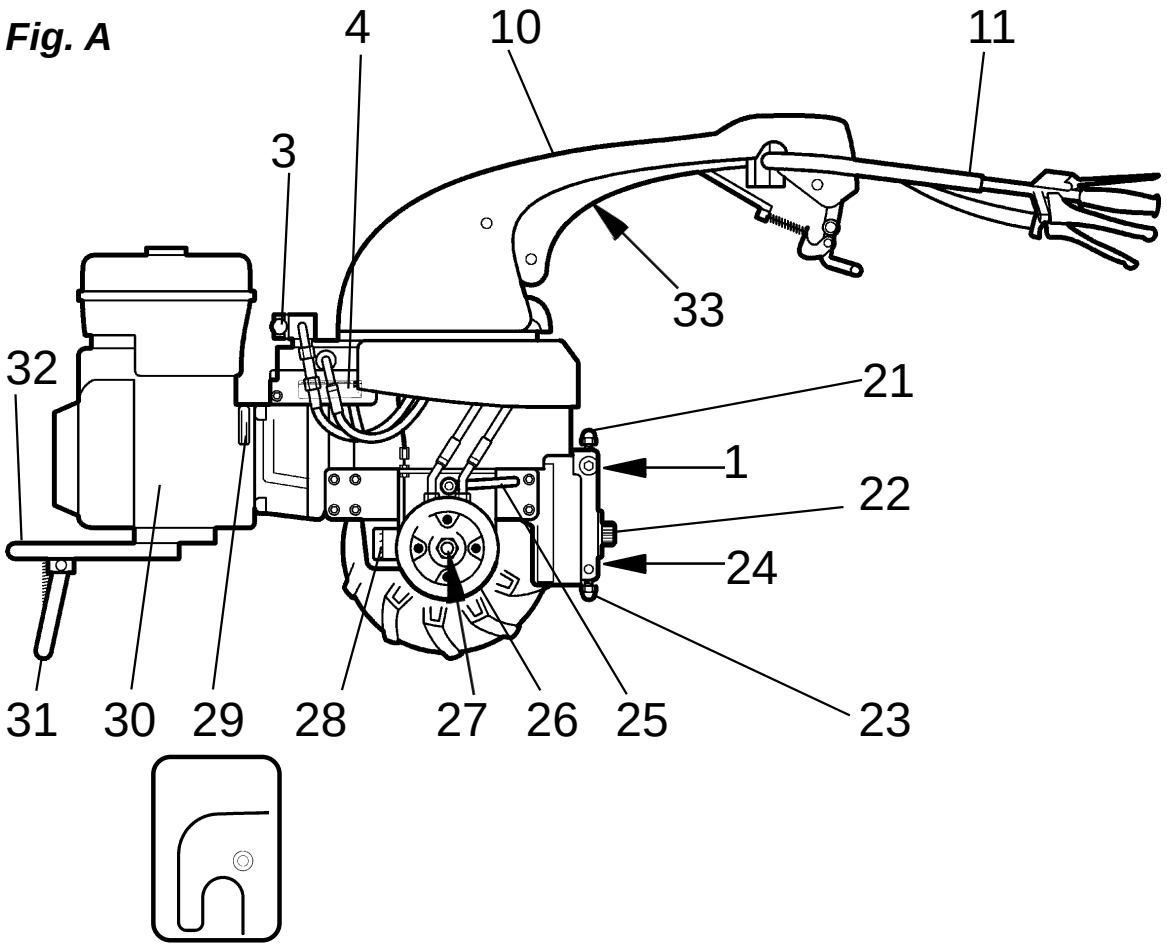


Fig. B

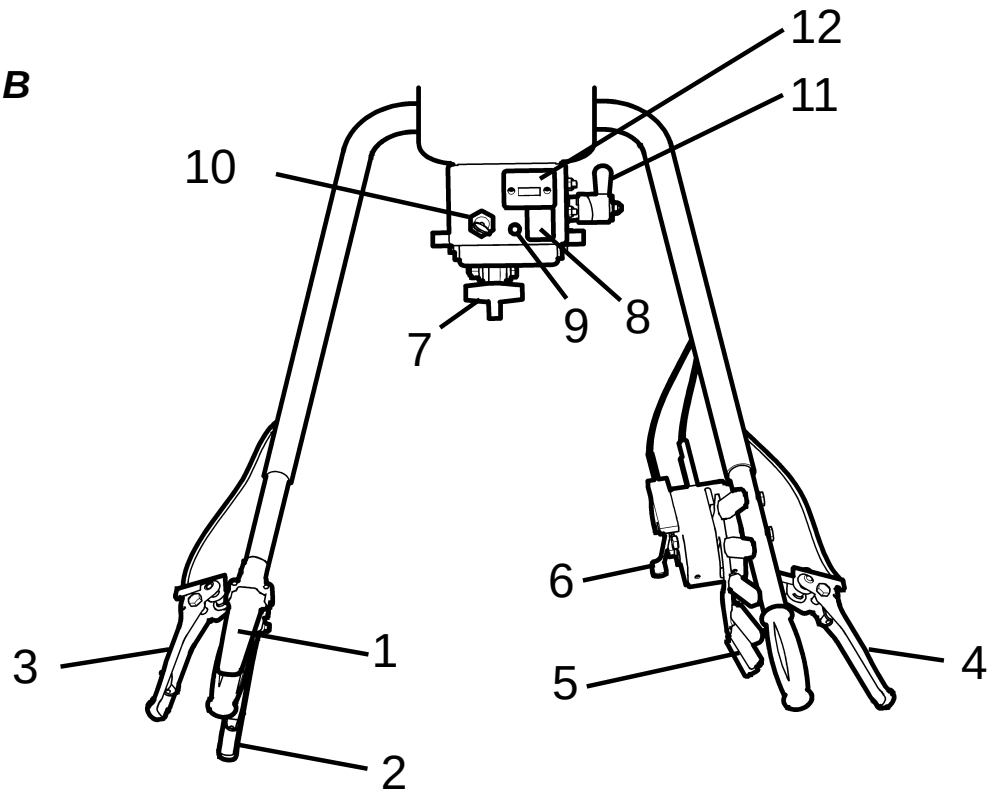


Fig. A:

1 *Inspection and filling opening for transmission / hydraulic oil*
3 *Idle speed shifting mechanism (bypass)*
4 *Nameplate (machine identification no.)*
10 *Lower steering handle*
11 *Steering bar*
21 *Eye bolt with cap nut, top*
22 *PTO-shaft*
23 *Eye bolt with cap nut, bottom*
24 *Transmission oil drain screw*
25 *Clamping lever for axle adjustment*
26 *Brake drum*
27 *Wheel hub*
28 *Oil filter cartridge*
29 *Hook for loading Belt*
30 *Engine*
31 *Stand*
32 *Weight mounting device*
33 *Socket (version diesel engine)*

Fig. B:

1 *Safety circuit lever*
2 *Lever for lateral steering bar adjustment*
3 *Lever for hydraulic steering gear left*
4 *Lever for hydraulic steering gear right*
5 *Lever for stepless adjustment of driving speed and forward-reverse driving*
6 *Speed adjusting lever*
7 *Eccentric lever for central brake*
8 *Operating mechanism for PTO clutch*
9 *Signal light for PTO*
10 *Ignition lock*
11 *Ratchet bolt for height adjustment of steering*
12 *Operating hour counter/speed counter*

Amount of Delivery 2

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Note fold-out pages!

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Lubricants and Anti-Corrosive Agents

Use the specified lubricants for engine and transmission (see "Specifications").

*We recommend using **bio-lubricating oil** or **bio-lubricating grease** for "open" lubricating points or nipples (as specified in the operating instructions).*

We recommend using bio anti-corrosive oil for preservation of machines and implements (do not apply on painted external covers). Oil can be brushed or sprayed on.

Anti-corrosive agents are kind to the environment and degrade fast.

Using ecologically safe bio-lubricants and bio-anti-corrosives, you contribute to environmental protection and to the wellbeing of humans, animals and plants.

Maintenance and Repair

The trained mechanics of your agria workshop carry out expert maintenance and repair.

You should only carry out major maintenance work and repairs on your own, if you have the proper tools and knowledge of machines and internal combustion engines.

Do not hammer against the flywheel with a hard object or metal tools as it might crack and shatter in operation causing injuries and damage. Only use suitable tools for pulling the flywheel.

Petrol Engine

*This engine runs smoothly on commercial **unleaded regular and supergrade petrol** as well as on **leaded supergrade petrol**.*

Do not add oil to petrol.

If, for environmental reasons, you use unleaded petrol, make sure the fuel is drained completely when shutting down the engine for more than 30 days. This is to prevent resin residues from depositing in the carburetor, fuel filter, and tank. Or add a fuel stabilizer.

For further instructions refer to "Engine Preservation".

Diesel Engine

This Diesel engine runs on conventional Diesel fuel of a min. cetane rating of 45.

Do not use Diesel fuel oil substitutes, they may be harmful to the fuel system. Fuel should be free of water or dust.

Winter operation:

To ensure reliable winter operation use "winter diesel fuel", to be purchased at filling stations.

***At outside temperatures of below -15°C** , take the following additional precautions:*

add commercial flow conditioners

or

add paraffine oil to depress diesel pour-point:

Paraffine oil:	***winter diesel fuel***	***summer diesel fuel***
	pour-point	
50%	*app. -31°C*	*app. -25°C*
30%	*app. -26°C*	*app. -15°C*
10%	*app. -20°C*	*app. - 9°C*

***As a last resort**, you can add up to 30% of regular petrol to avoid paraffine deposits. However, this has negative effects on consumption rate and performance.*

Before starting the engine, read the operating instructions and note:

Warning

This symbol marks all paragraphs in these operating instructions which affect your safety. Pass all safety instructions to other users and operators.

Due Use

The two-wheel tractor is a hand-controlled automatic single-axle machine which can power and/or pull various implements approved by the manufacturer. Areas of application are for such as turning over the ground, mowing grass and meadowland, snow clearance and sweeping (due use).

Any other type of operation is considered undue. The manufacturer is not liable for any damage resulting from undue use, for which the risk lies with the user alone.

When the single-axle tractor/the tool carrier/the multi-purpose machine is used on public roads, the local national road traffic rules must be observed, e.g. reflectors, lights.

The single-axle tractor/the tool carrier/ The multi-purpose machine is not intended for use with a trailer on public roads or as as a tractor unit without implements.

Due use includes compliance with manufacturer's instructions on operation, maintenance and repair.

Any unauthorized changes to the two-wheel tractor render manufacturer liability null and void.

General Instructions on Safety and Accident Prevention

Basic Rule:

The standard accident prevention regulations must be adhered to, as well as all other generally accepted rules governing operational safety, occupational health and road traffic regulations.

For drives on public roads, the latest traffic code applies.

Accordingly, check the two-wheel tractor for road and operational safety each time you take up operation.

Only persons familiar with the two-wheel tractor and instructed on the hazards of operation are allowed to use, maintain and repair the two-wheel tractor.

Young persons of 16 years or younger may not operate the two-wheel tractor!

Only work in good light and visibility.

Operator's clothes should fit tightly. Avoid wearing loosely fitting clothes. Wear solid shoes.

Note the warning and instruction signs on the two-wheel tractor for safe operation. Compliance is for your own safety.

When transporting the two-wheel tractor on vehicles or trailers outside the area to be cultivated, ensure that the engine is shut off.

Careful with rotating tools – keep at a safe distance!

Beware of coasting tools. Before you start any maintenance or repair on them, wait until tools have come to a complete stop.

Foreign powered parts shear and crush!

Riding on the attachment during operation is not permitted.

Implements and weights affect the driving, steering, braking, and tip-over characteristics of the two-wheel tractor. Therefore, ensure steering and braking functions are sufficient. Match operating speed to conditions.

Do not change settings of governor. High engine speed increases risk of accidents.

Working Area and Danger Zone

The user is liable to third parties working within the two-wheel tractor's working range.

Staying in the danger zone is not permitted.

Check the immediate surroundings of the two-wheel tractor before you start it. Watch out for children and animals.

Before you start work, clear the area from any foreign object. During operation, always watch out for further objects and remove them in time.

For operation in enclosed areas, ensure that a safety distance is kept to enclosures to prevent damage to tools.

Operation and Safety Devices

Before you start the engine

Become familiar with the devices and operating elements and their functions. Above all, learn how to turn the engine off quickly and safely in an emergency situation.

Ensure that all protective devices are mounted and positioned to provide protection.

With no implement mounted, make sure PTO-shaft is covered with the protective cap.

Starting the engine

Do not start engine in closed rooms. The carbon monoxide contained in the exhaust fume is extremely toxic when inhaled.

Before you start the engine set all operating elements to neutral or idling position.

For starting the engine, do not step in front of the two-wheel tractor and the implement.

Do not use assist-starting liquids when using electrical assist-starting devices (jumper cable). Danger of explosion.

Operation

Never leave the operator's position at the steering handle while two-wheel tractor is at work.

Never adjust the operating handles during work – danger!

For all works with the two-wheel tractor, in particular for turning, the machine operator must keep the distance to the machine given by the steering handles.

Riding on the implement during operation or in transport is not permitted.

If clogging occurs in the implement, shut off the engine and clean the implement with an appropriate tool.

In case of damage to the two-wheel tractor or to the implement, immediately shut off the engine and have it repaired.

If steering causes problems, immediately bring the two-wheel tractor to a halt and turn it off. Have the malfunction removed without delay.

To prevent the two-wheel tractor from sliding on slopes make sure it is secured by another person using a bar or a rope. This person must stay at a higher position than the vehicle and at a safe distance from the attachment at work.

If possible, always work across the slope.

End of Operation

Never leave the two-wheel tractor unattended with the engine running.

Before you leave the two-wheel tractor, shut off the engine. Then close fuel taps.

Secure two-wheel tractor against unauthorized use. If two-wheel tractor is equipped with ignition key, remove the key. For all other versions, remove spark plug connector.

Implements

Only mount implements with the engine and PTO shut off.

Always use appropriate tools and wear gloves when changing implements and parts thereof.

For mounting and dismounting implements bring stand into proper position and ensure stability.

Secure two-wheel tractor and implements against rolling off (parking brake, wheel chocks).

Beware of injuries while coupling implements. Work with particular care.

Hitch implements as specified and only couple at specified points.

Secure two-wheel tractor and implement against unauthorized use and rolling off when you leave the machine. If necessary, install transport or security devices and secure.

Mowing Implement

Handle with care! Sharp blades of the cutter bar may cause injuries! Remove knife guards only for mowing and refit immediately after work has finished.

For transport and storage always mount the knife guards. Secure finger bars additionally with tension springs.

Do not transport the dismounted cutter bar without knife guards.

When mounting and dismounting the cutter bar, make sure all blades are protected by the knife guards.

To exchange the knife and to mount/dismount the knife driver, make sure that you turn screws away from cutting blades.

For grinding the mowing knives, always wear safety goggles and gloves.

Weights

Fit weights properly and at specified points.

Maintenance

Never carry out any maintenance or cleaning with the engine running.

Before you work on the engine, always remove spark plug connector.

Check regularly and, if necessary, replace all protecting devices and tools subject to wear and tear.

Replace damaged cutting tools.

Always wear safety gloves and use proper tools when exchanging cutting tools.

Do not carry out repairs like welding, grinding, drilling, etc. on structural and safety-relevant parts (e.g. hitch)!

Keep two-wheel tractor and implement clean to avoid risk of fire.

Check nuts and bolts regularly for tight fit and re-tighten, if necessary.

Ensure that you re-install all safety and protective devices and adjust them properly after maintenance and cleaning.

Only use original agria spare parts. All other commercial spare parts must correspond to quality and technical requirements specified by agria.

Storage

It is not allowed to store the two-wheel tractor in rooms with open heating.

Never park the two-wheel tractor in closed rooms with fuel left in tank. Fuel vapours are hazardous.

Engine, Fuel, and Oil

Never let the engine run in closed rooms. Extreme danger of intoxication! For the same reason, also replace damaged exhaust pipe immediately.

Be careful when handling fuel. Great danger of fire! Never refill fuel close to open fire, inflammable sparks or hot engine parts. Do not refill fuel in closed rooms. Do not smoke when refilling!

Refill only with the engine shut off and cooled down.

Do not spill any fuel, use a proper filling device (e.g. funnel).

In case of fuel-spillage, pull the two-wheel tractor away from the spillage before you start the engine.

Make sure fuel is of specified quality.

Store fuel in approved cans only.

Liquids leaking under high pressure, e.g. fuel, can penetrate the skin and cause severe injuries. Immediately see a doctor.

Store anti-corrosive agents and stabilizing liquids out of reach of children. If sickness and vomiting occur, see a doctor. If fuel has contacted eyes, rinse them thoroughly, avoid inhaling of vapours.

Read and observe enclosed instructions.

Before you dispose of opened and seemingly empty pressurised tins (e.g. of assist-starting liquids) make sure they are completely empty. Empty them in ventilated places safe from spark formation or flames. If necessary, dispose of tins in hazardous waste deposits.

Be careful when draining hot oil, danger of burns.

Make sure oil used is of specified quality. Storage is in approved cans only.

Dispose of oil, greases, and filters seperately and properly.

Hydraulic System

The hydraulic system is subjected to high pressure.

When connecting hydraulic motors, ensure the specified connection of the hydraulic hoses.

Hydraulic oil emerging under high pressure may penetrate the skin and cause serious injuries.

In case of injuries, immediately consult a physician – risk of infections.

Prior to works on the hydraulic system, render the latter pressureless and shut down engine (specialized workshop).

When searching leakages, use suitable aids considering the risk of injuries (specialized workshop).

Regularly check hydraulic hose lines for damage and ageing and replace them, if necessary.

Only use original agria hydraulic hoses.

Tyres and Tyre Air Pressure

When working on wheels, make sure two-wheel tractor is parked properly and secured against rolling off.

Any repairs are to be carried out by trained mechanics only and with the appropriate tools.

Regularly check tyre air pressure. Excessive pressure may cause bursts.

Use appropriate tyre air pressure for operation with implements.

Re-tighten attachment bolts of drive-wheels or check tightness when doing maintenance work.

Electrical System and Battery

When working on the electrical system, make sure the battery is disconnected (negative pole) (for two-wheel tractors equipped with battery).

Make sure to connect battery properly – first connect positive pole and then negative pole. Disconnect in reverse order.

Be careful with battery gases – explosive!

Avoid spark discharge and open flames near batteries.

Remove plastic cover (if included) to recharge battery to prevent highly explosive gases from building up.

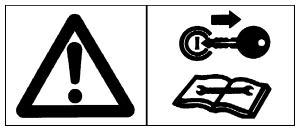
Be careful when handling battery acid!

Only use specified fuses. Stronger fuses will destroy the electrical system – danger of fire.

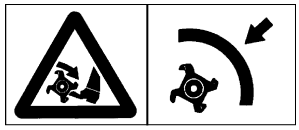
Always cover positive pole with specified cover or terminal cap.

Persons having a pacemaker may not touch live parts of the ignition system when the engine is running.

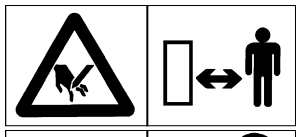
Explanation of Warning Signs

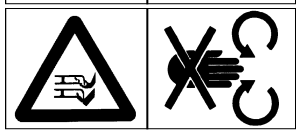


Before any cleaning, maintenance, and repair work shut off the engine and pull ignition key.

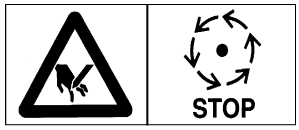


Do not work without protective covers mounted. Before starting the engine, bring covers in proper position.

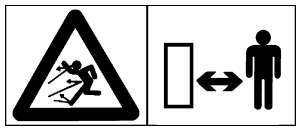




With engine running, keep at a safe distance from cutting knife.



Do not touch moving machinery parts. Wait until they have come to a complete stop.



With engine running, keep at a safe distance.

Signs

When working with the machine, wear individual protective ear plugs.

Wear protective gloves.

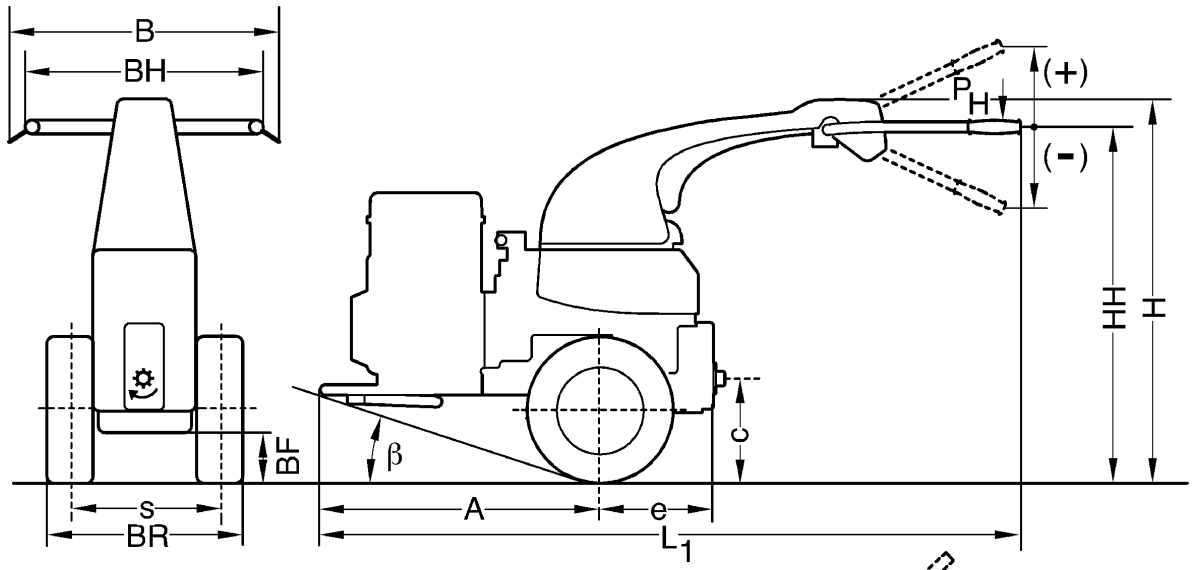
Wear solid shoes.

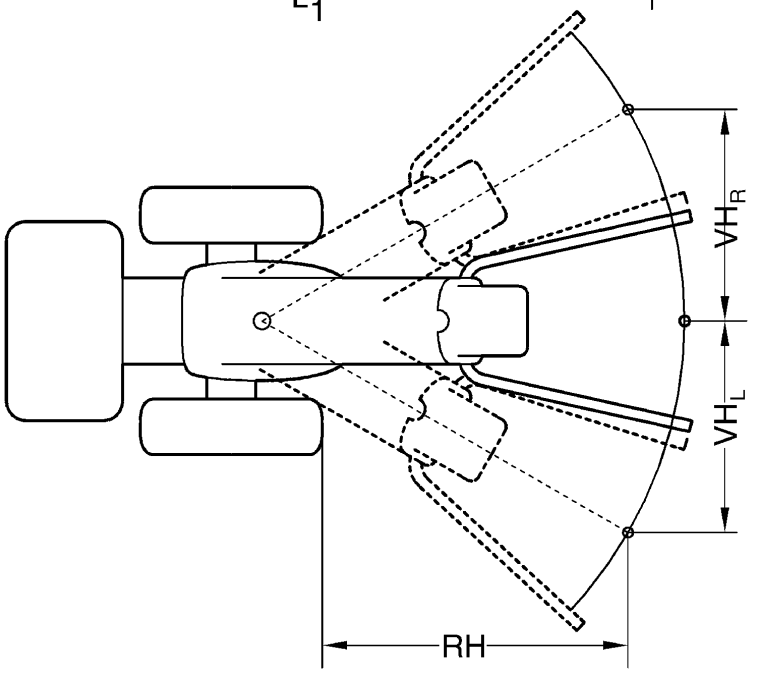
2

Dimensions two-wheel tractor:

	(mm)																
	A min	A max	B	BF	BH	c	e max	e min	H	HH	+ / -	L_1	RH min	RH max	VH_L VH_R	□ (e max)	□ (e min)
5.00-10 AS	640	810	780	125	610	270	360	190	980	870	240	2010	930	1100	620	17°	21°
20x8.00-10																	
21x11.00-8																	
5.00-12 AS						290			1000	890	240		950	1120		*23°*	*18,5°*
23x8.50-12																	
23x10.50-12																	

BR and S see track widths table page 16

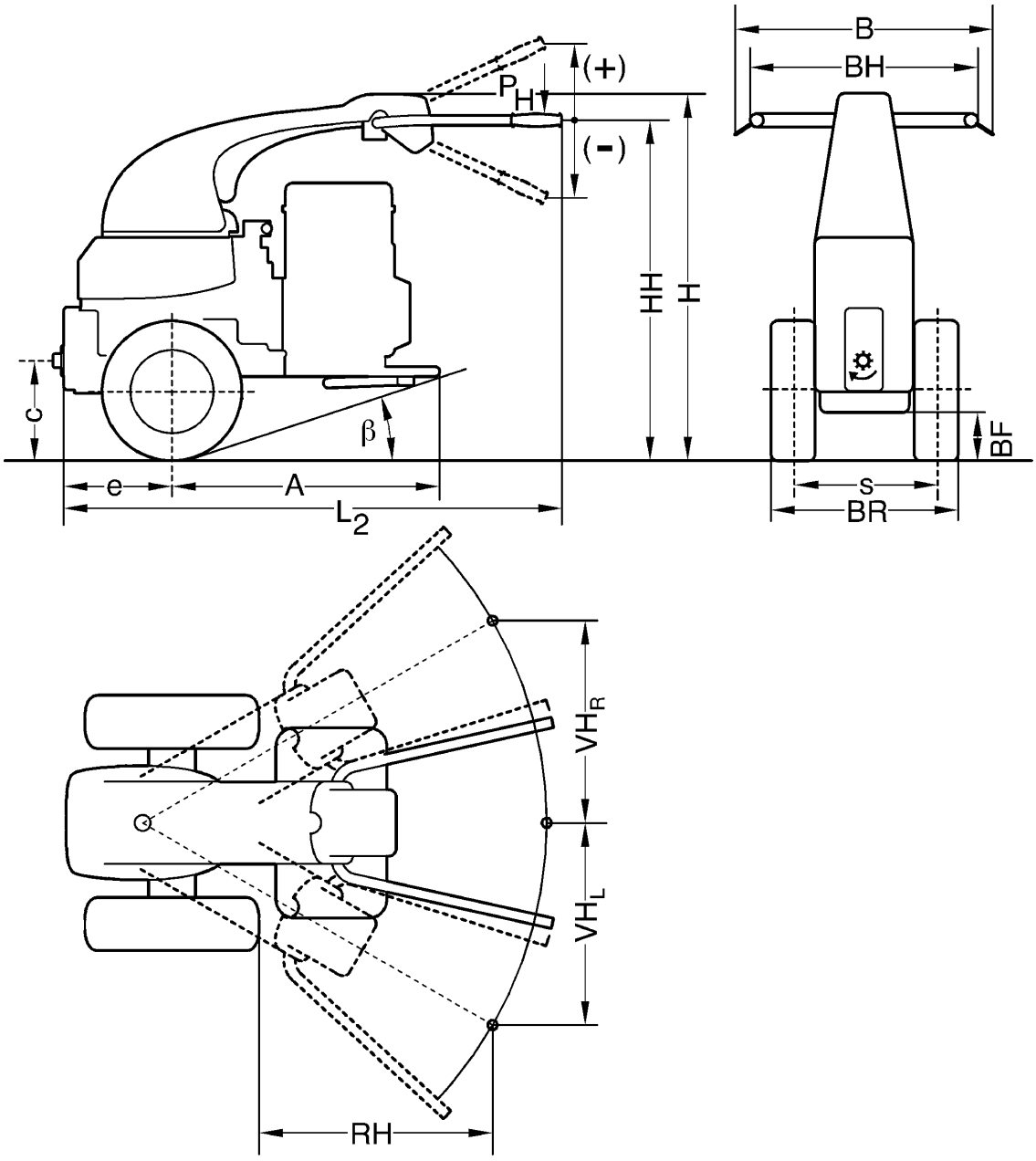




Dimensions tool carrier:

	(mm)																
	A min	A max	B	BF	BH	c	e max	e min	H	HH	+/-	L2	RH min	RH max	VH_L VH_R	H (e max)	H (e min)
5.00-10 AS	640	810	780	125	610	270	360	190	980	870	240	1655	995	1165	620	17°	21°
20x8.00-10																	
21x11.00-8																	
5.00-12 AS						290			1000	890	240		1015	1185		23°	18,5°
23x8.50-12																	
23x10.50-12																	

BR and S see track widths table page 16



2500 Hydro

(mm)

B																									
							30			30			60			60			90			90		
		A	S	i	A	S	i	A	S	i	A	S	i	A	S	i	A	S	i				A	S	i
1	23x8.50-12 AS				880	665	450				940	725	510	780	565	350	1000	785	570	840	625	410	1060	845	630
2	23x10.50-12 AS				870	595	320				930	655	380	910	635	360	990	715	440	970	695	420	1050	775	500
3	5.00-12 AS				800	645	490	680	525	370	860	705	550	740	585	430	920	765	610	800	645	490	980	825	670
4	5.00-10 AS	610	480	350	760	630	500	670	540	410	820	690	560	730	600	470	880	750	620	790	660	530	940	810	680
5	20x8.00-10 R	700	510	320	790	600	410	760	570	380	850	660	470	820	630	440	910	720	530	880	690	500	970	780	590
6	21x11.00-8 Terra																980	705	430	970	695	420	1040	765	490

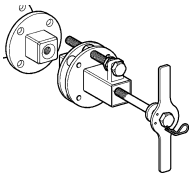
(mm)

B		60			220			V +B1	V +B2	V +B3	V +B4	V +B5	V	V
		A	S	i	A	S	i	A	A	A	A	A	A	A
1	23x8.50-12 AS				1330	1115	450	1310	1430	1190			1364	
2	23x10.50-12 AS							1300	1420	1180			1354	
3	5.00-12 AS				1250	1095	490	1230	1350	1110			1284	
4	5.00-10 AS	890	760	335	1210	1080	500				1020		1244	1094
5	20x8.00-10 R				1240	1050	410					1170		
6	21x11.00-8 Terra													

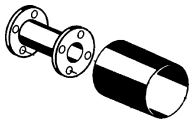
30= intermediate flange *30 mm* *2516 011*

60= intermediate flange *60 mm* *2416 011*

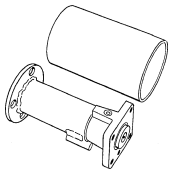
90 = track-width adjuster *90 mm* *5519 031*



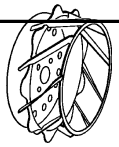
V = intermediate flanges Vario *5916 211*



220 = track-width adjuster *220 mm* *5616 511*



220A = track-width adjuster *220 mm* *with balancer* *5519 011*

	Tyre	Tread Profile	Use	Item No.
	5.00-10	field tyre	general maintenance	0190 112
	5.00-12	field tyre	general maintenance	3490 411
	20x8.00-10	grass tyre	grass maintenance	3490 511
	21x11.00-8	terra tyre	general maintenance - Reduction of the ground pressure, ideal for use in biotopes and wet fields	3490 611
	23x8.5-12	wide-track field tyre	general maintenance	5990 611
	23x10.5-12	wide-track field tyre	general maintenance	5990 711
	10"	traction cage wheels	working on slopes	5917 011
	12"	traction cage wheels	working on slopes	5917 021

Transmission: ..... Hydrostat
Driving speeds:
Forward ..... 0–6.0 km/h
Reverse ..... 0 - 4.0 km/h

PTO: ..... 805 rpm
gear independent
at 3600 engine rpm
direction of rotation:
clockwise, looking on PTO,
constant in forward and reverse
PTO clutch ..... electromagnetic

Steering: .....
completely hydraulic manual lever steering

Steering handle: ..... without tools
..... height adjustable
side adjustable in each case 25°
swivelling 180°

Oil for transmission and hydrostat:
optionally:
- hydraulic oil: ..... Mobil ATF 220
- Bio-hydraulic oil:

Synthetic ester basis ..... HEES
Viscosity as per ISO ..... VG 46
Purity class ..... min. 16/13-ISO 4406
e.g.
ARAL: ..... Vitam EHF 46
BP: ..... Biohyd SE 46
ESSO: ..... HE 46
FUCHS: ..... Plantohyd S 46
PANOLIN: ..... HLP Synth 46

Filling volume at
First filling: ..... abt. 4.5 l
Oil change: ..... abt.4.0 l

Oil filter: . Screw-type cartridge AW 14

Weights:

Empty weight: (with fuel tank filled up):

	without drive-wheels	with 23x8.50-12
Vanguard Recoil starter	190.8 kg	224 kg
Vanguard Electric starter	198.8 kg	239 kg
Yanmar Electric starter	216,8 / 257 kg	

Tyres: ..... optionally:
0190 112 ..... 5.00-10 field tyre
3490 411 ..... 5.00-12 field tyre
3490 511 ..... 20x 8.00-10 grass tyre
3490 611 ..... 21x11.00-8 terra tyre
5990 611 23x8.50-12 wide track field tyre
5990 711 23x10.50-12 wide track field tyre
partially track-width adjusters are required, see page 16

Tyre air pressure at:
5.00-10 ..... 1.5 bar
5.00-12 ..... 1.5 bar
21x11.00- 8 ..... 0.8 bar
20x8.00- 10 ..... 0.8 bar
23x8.50-12 ..... 1.3 bar
23x10.50-12 ..... 1.3 bar

5917 011 ..... traction cage wheels10"
..... for 5.00-10 AS
5917 021 ..... traction cage wheels12"
for 5.00-12; 23x8.50-12; 23x10.50-12)

Drive-wheel application . see page 17
Drive-wheel attachment .. see page 28

Petrol Engine

Manufacturer: ..... Briggs & Stratton
Type: ..... Vanguard OHV 13 HP
..... 245 437-0284
Version: ..... Fan-air-cooled
1 cylinder-4-stroke
OHV engine (petrol)
Bore: ..... 89 mm
Stroke: ..... 63 mm
Cubic capacity: ..... 390 ccm
Output: ..... 9.7 kW (13 SAE-hp)
at 3600 rpm
Max torque: ..... 25.1 Nm at 2400 rpm
Spark plug: ..... Bosch FR8DC
Champion RC12YC
Spark plug gap 0.76 mm

Ignition:
Electr. magnetic ignition, contactless
ignition point is pre-set
Radio remote screened ..... as per
VDE 0879

Valve clearance (engine cold):
Intake ..... 0.05 mm
Outlet ..... 0.10 mm

Starter: ..... Recoil or electric starter
depending on version
Generator: 12V 16A

Battery: E-starter version .. 12V 20Ah
Flat plug fuse 15A

Fuel: ..... Commercial petrol
min. octane number 90 RON
(refer to fuel recommendations)

Fuel tank capacity: ..... abt. 7.9 l

Fuel consumption: ..... 312 g/kWh

Air filter: ..... Dry filter element with
foamed preliminary filter

Carburetor: ..... Horizontal
float carburetor

Rated speed: ..... 3600 rpm

Top no-load speed: ..... 3800 rpm

Idling speed: ..... 1750 rpm

Engine oil:
Filling quantity ..... approx. 0.96 l
Multi-grade oil
at ambient temperature -15° to +45°C:
SAE 10W-40 API-SC (or higher)
at ambient temperature -25° to +15°C:
SAE 10W-20 API-SC (or higher)

without OIL GARD

Noise level:

- in accordance with EN 709 appendix C, respectively EN 12733 appendix B:
Noise level at operator's ear:
- without implement .... L_P= 80,5 dB(A)
- Portal mowing drive .. L_P= 86,2 dB(A)
- Rotary mower 80 ..... L_P= 85,6 dB(A)
- Safety Mulcher 90 ... L_P= 86,2 dB(A)

- in accordance with 2000/14/EG, appendix III, part B, chapter 32 lawn mower:
Acoustic power level:
- without implement ..... L_P= 99,1dB(A)
- Portal mowing drive L_P= 106,3 dB(A)
- Rotary mower 80 .... L_P= 105,6 dB(A)
- Safety Mulcher 90 . L_P= 106,3 dB(A)

Vibration acceleration value:
In accordance with 2002/44/EC and EN 12733
on handlebar grip with: .....
- Rotary mower 80 ..... a_{hw} 3,3 m/s^2
-Safety Mulcher 90 ..... a_{hw} 4,78 m/s^2

Operability on Slopes:
Engine is suited for use on slopes (with oil level at "max" = upper level mark)
Continuous operation
..... 45° inclination (100%)

Diesel Engine

Manufacturer: ..... Yanmar

Type:
Electric starter version L100
Recoil starter version L100

Version: ..... Fan-air-cooled 1-cylinder-4-stroke diesel engine

Bore: ..... 86 mm

Stroke: ..... 70 mm

Cubic capacity: ..... 406 ccm

Output: ..... 7.4 kW at 3600 rpm

Max torque: ..... 27 Nm at 1700 rpm

Injection pressure: ..... 200 bar

Valve lash (engine cold)
Intake: ..... 0.15 ± 0.02 mm
Outlet: ..... 0.15 ± 0.02 mm

Starter: ..... Recoil or electric starter, depending on version

Battery: 12V 18Ah

Glass fuse ..... 15A (30 x 6.5 mm)

Generator: 12V 90W

Fuel: ..... conventional fuel,
Min. cetane rating: 45
(refer to fuel recommendations)

Fuel filter:
Coarse-mesh strainer ..... in filler neck
Fine-mesh strainer ..... in fuel tank drain hole

Fuel tank capacity: ..... approx. 5.5 l

Air filter: ..... Dry filter element with foamed preliminary filter and cyclone pre-separator

Rated speed: ..... 3600 rpm

Top no-load speed: ..... 3800 rpm

Idling speed: ..... 1700 rpm

Lubrication: ..... Pressure lubrication via gear pump
Full flow oil filter

Engine oil:

Filling quantity ..... approx. 1.65 l
Multi-grade oil

at ambient temperature -15° to +45°C:
SAE 10W-40 API-SC (or higher)

at ambient temperature -25° to +15°C:
SAE 5W-20 API-SC (or higher)

Noise level:

Noise level at operator's ear .....
..... 88 dB(A)
(In accordance with EN 709 and EN 1553)

Acoustic power level: ..... 99 dB(A)
(In accordance with 84/538 EEC at 85% of rated engine speed)

Vibration acceleration value:
In accordance with 2002/44/EG and EN 12733
on handlebar grip with: .....
-without mounted implement .....
..... a_{eq} 4,77 m/s²
-Rotary mower 80 ..... a_{eq} 5,35 m/s²
-Safety mulcher 90 ..... a_{eq} 4,38 m/s²
-Stone burier U80 ..... a_{eq} 5,90 m/s²

Operability on Slopes:

Engine is suited for use on slopes
(oil level at "max" = upper mark)

Continuous operation possible
up to ..... 20° inclination (37 %)

The two-wheel tractor agria type 2500 Hydro is a basic motorised unit and is always used with an implement. Therefore it is most suitable for normal use in landscape gardening and in agriculture and forestry work for such as turning over the ground, mowing grass and meadowland, snow clearing and sweeping.

When the single-axle tractor/the tool carrier/the multi-purpose machine is used on public roads, the local national road traffic rules must be observed, e.g. reflectors, lights.

Available implements:

- *Rear implements for example*
  - *hoeing and tilling equipment*
  - *ploughs und cultivator*
- *Front implements for example*
  - *mower drives*
  - *sweepers*
  - *snow dozer and snow caster*
  - *gravel and salt spreader*
  - *stoneburiers*
  - *power harrows*

For a choice of further attachments refer to our price-list.

Engine

● *The **four-stroke petrol engine** runs on commercial petrol (refer to fuel recommendations page 7).*

Ignition System

The engine is equipped with a contactless ignition system. We recommend to have necessary check-ups done by an expert only.

● *The **four-stroke diesel engine** runs on commercial diesel fuel (refer to fuel recommendations p7). See to using proper fuel in winter.*

ⓘ ***High engine speed is harmful to any engine and considerably affects its durability. This applies especially for no load operation. Any overspeed (have the engine roar) can result in immediate damage.***

During the first 20 operating hours (break-in period) do not use engine to maximum power.

***Even after break-in period** never use engine at higher speed than necessary for the work in hand.*

Cooling System

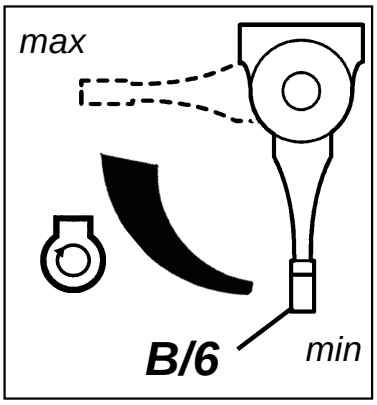
The cooling system is fan-cooled. Therefore keep screen at recoil starter and cooling fins of cylinder clean and free from sucked-in plant trash.

Idling-speed

Always ensure that idling-speed is adjusted correcty. At low speeds and with the speed control lever set to idle, the engine is supposed to run smoothly and without run-out.

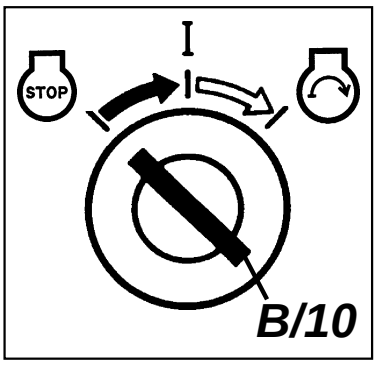
Air Filter

The air filter purifies the air intake. A clogged filter reduces engine output.



Speed Control Lever

The speed control lever (B/6) on the steering handle is for stepless setting of engine speed from min. = idle to max. = full throttle.



Engine Shut-off Switch / Ignition lock

the ignition lock (B/10) has 3 gear settings

= engine shut off
key can be taken out

I *= Ignition on (operation position)*

= Start position ***(only version electric starter)***
the ignition key automatically returns to the operation position " **I** "

The engine can be started even with the mechanism of reverse starter, only if the ignition lock is switched to operating position " **I** "!

If the engine has not been started, wait before re-starting until the engine has come to a stop, otherwise damage is possible to starter pinion or crown gear.

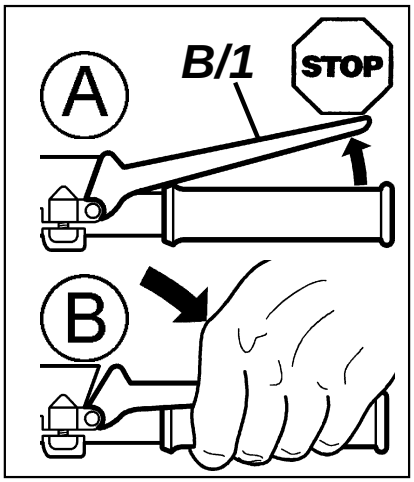
The ignition key also serves ***to shut off the engine in an emergency****:*
set the key to STOP *for fast shut-off!*

Warning signal (Version Electric Starter)

The warning signal sounds when ignition key is in position "I" and the engine is at a standstill, and goes out as soon as the engine runs and the generator starts charging the battery.

It also goes out when the ignition key is in position STOP *or is removed.*

If the warning signal sounds while the engine is running, the generator does not charge the battery correctly
→agria - Service←



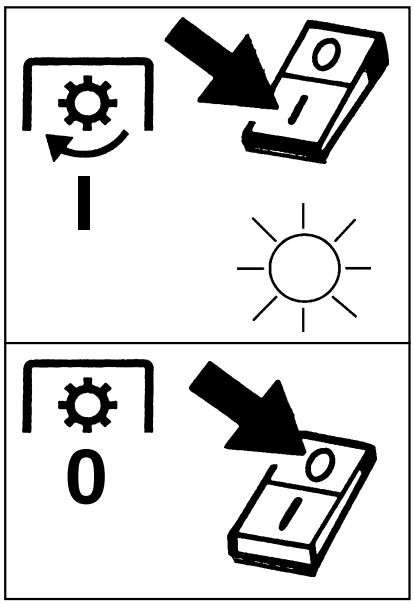
Safety circuit

Ⓐ *Engine shutt-off position "0" (lever not pressed).*

Ⓑ *Operating position (lever pressed down and held)*

Do not fasten safety circuit lever.

Release the safety circuit lever in an emergency, the lever will automatically go to STOP position!



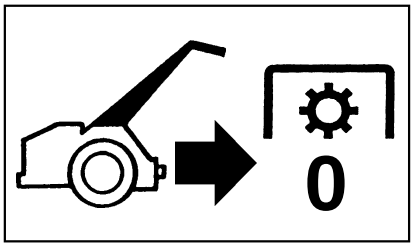
PTO-Shaft Connection

The speed-independent PTO (A/22) is connected with an electric mechanism.

I = *PTO-drive is connected*
- signal light (B/9) shines

0 = *PTO-drive is disconnected*
- signal light (B/9) out

The PTO-drive switches off automatically if the ignition key is turned to 0.



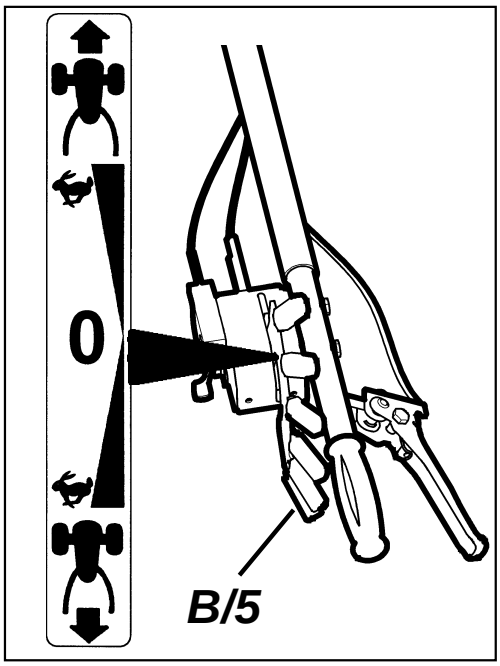
PTO-Reversing Lock

In "two-wheel tractor mode" (rear-mounted PTO-driven equipment) the PTO-drive similarly switches off automatically when travelling in reverse or cannot be switched on (safety circuit).

The PTO-drive can only be switched on when the safety switch (B/1) is pressed in the "operating position".

Transmission

The agria two-wheel tractor is equipped with a hydrostatic drive.



Setting the Driving Speed and Direction

Lever shift model

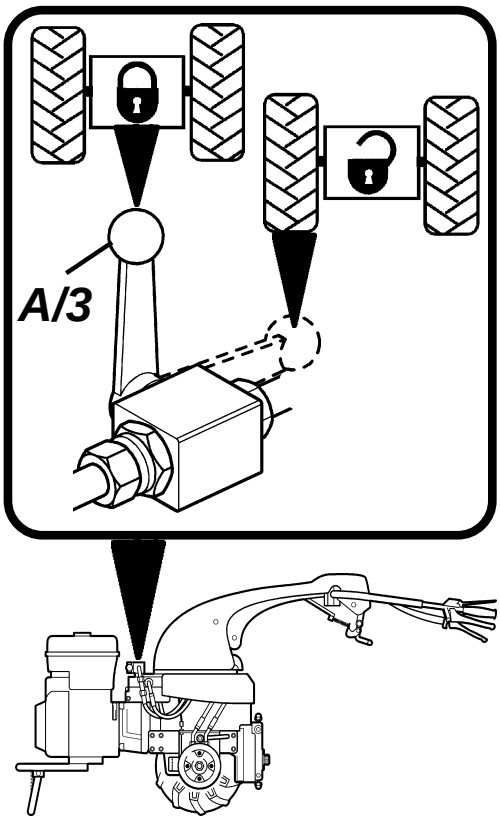
- *The driving speed forward or reverse is steplessly set or changed with the forefinger or the thumb at the driving lever (B/5).*
- *The zero-position on the driving lever is provided with a spring catch.*
- *When turning the driving lever forwards, the driving speed is steplessly increased forwards and accordingly backwards, if the driving lever is turned backwards and down.*

ⓘ ***The engine can only be started if the driving switch is set to "0"!***

Coasting operation

The machine can be coasted without engine, if the idle shift is opened 🔓

- if a steering handle is operated, light steering is possible (not a fixed axle); an advantage when attaching equipment.



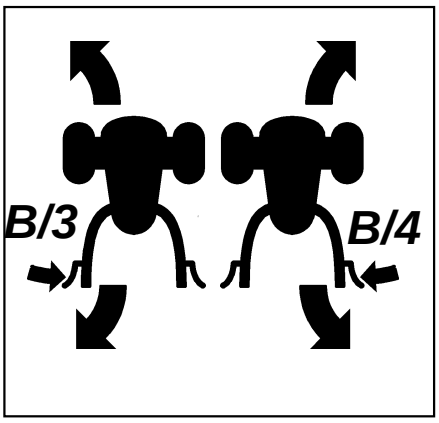
- *The idle shift (A/3) is arranged between engine and steering handle of the two-wheel tractor and is able to be switched by moving the gear lever.*
- *The hydraulic drive is activated again, when the idle shift is closed* 🔒.

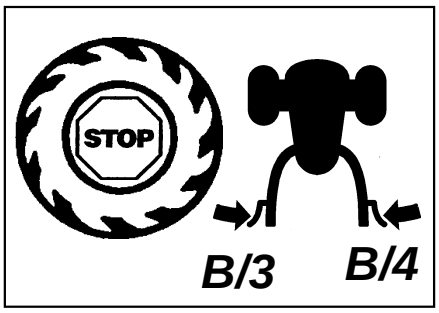
⚠ ***Never switch on hydraulic drive when engine is running.***

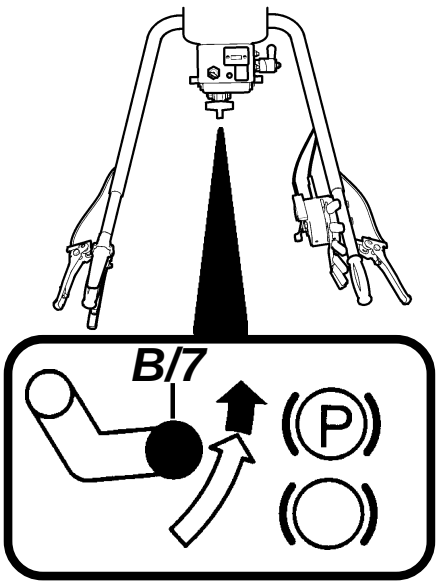
- *Prior to starting the works, check shifting position!*

ⓘ ***Coasting operation or towing up to max. 4 km/h.***

Trailing is not permitted!







ⓘ ● ***Do not drive and brake at the same time.***

● ***Prior to starting driving, absolutely disengage brake as otherwise risk of damage due to overpressure (failure of wheel motors).***

Hydraulic Steering

With the hydraulic steering, the inner wheel at the curve becomes slower up to the standstill, the outer wheel at the curve keeps it velocity.

Steering

● *By operating the steering handles (B/3 or B/4) the hydraulic steering is activated with running engine.*

● *Steering only during driving, not upon a standstill.*

● *The stronger the steering movement, the quicker the hydraulic steering*

⚠ ***Never completely pull back steering handles at high speed - danger of spinning out of control!***

Quick Stop

● *By operating both steering handles (B/3 + B/4) drive becomes slower*

● *By pulling both steering handles to the stop the drive is stopped (Use recommended for instance where engine is overloaded)*

- the additional tool drive (PTO-drive) is still available.

Central Brake

To slow down or park the machine on hilly ground, use the combined central parking brake.

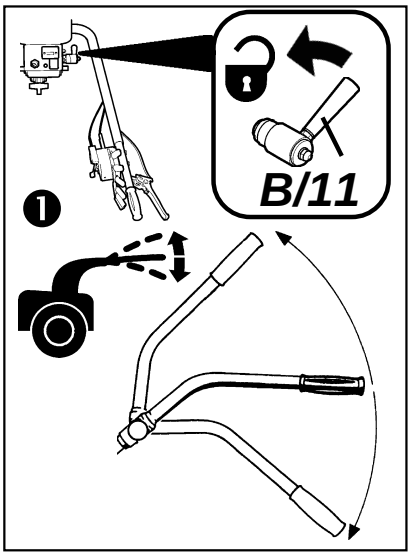
● ***Central Brake*** (◯)

Swivel the eccentric lever (B/7) backwards and up – both drive-wheels are braked.
Release the eccentric lever and the lever swivels back to the original position – brake is released.

● ***Parking brake*** ((Ⓟ))

Swivel the eccentric lever (B/7) backwards and up beyond the dead centre. The eccentric lever automatically comes to a stop – both drive-wheels are blocked.

To release parking brake, swivel eccentric lever back to original position – brake is released.



Steering Handle

⚠ ***Do never adjust operating handles during working – risk of accidents!***

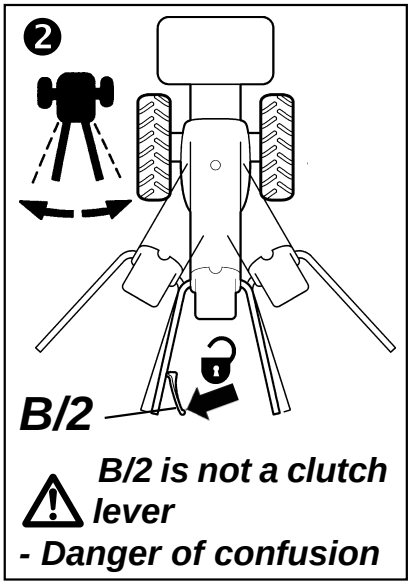
❶ Steering Handle – Height Adjustment

● *Turn ratchet bolt lever (B/11) about a half turn and hold.*

● *Bring steering handle to the desired height*

● *Turn back the ratchet bolt lever and move the steering arm up and down a little until the ratchet bolt engages.*

3



⚠ ***B/2 is not a clutch lever***
- Danger of confusion

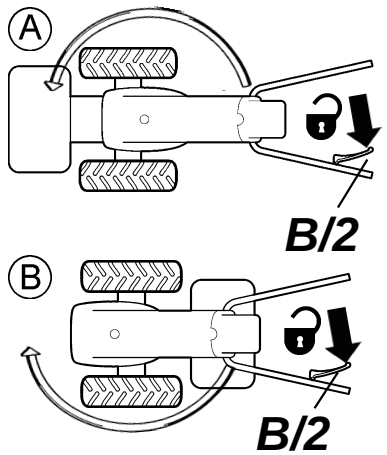
❷ Steering Handle – Lateral Adjustment

From its normal position (centre position), the steering handle can be turned by about 25° to the left or right.

● *Pull lever (B/2) and keep it in position; then turn steering handle to the left or right into the desired position.*

● *Release lever and slightly move steering handle to the left and right until the fixing bolt is engaged.*

❸ ***Steering handle adjustment 180° only with engine off!***



❸ Steering Handle – Adjustment

The steering handle can be turned in two basic positions (180°).

● *Position two-wheel tractor for rear attachments*

● *Position tool carrier for front implements*

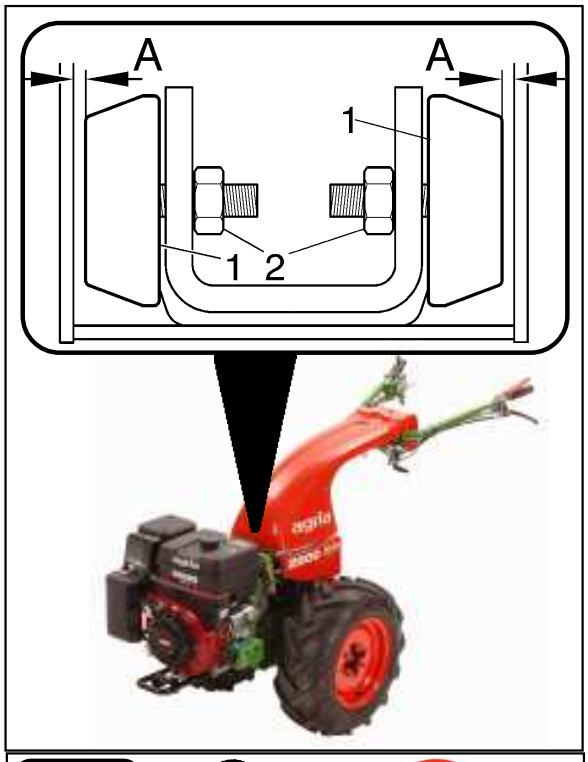
Ⓐ ***From position two-wheel tractor to position tool carrier:***

● *Pull lever (B/2) and keep it in position, then turn steering handle* ***counter clockwise*** *by 180°* ● *Release lever and slightly move steering handle to the left and right until the fixing bolt is engaged.*

Ⓑ ***From position tool carrier to position two-wheel tractor:***

● *Pull lever (B/2) and keep it in position, then turn steering handle* ***clockwise*** *by 180°*

● *Release lever and slightly move steering handle to the left and right until the fixing bolt is engaged.*



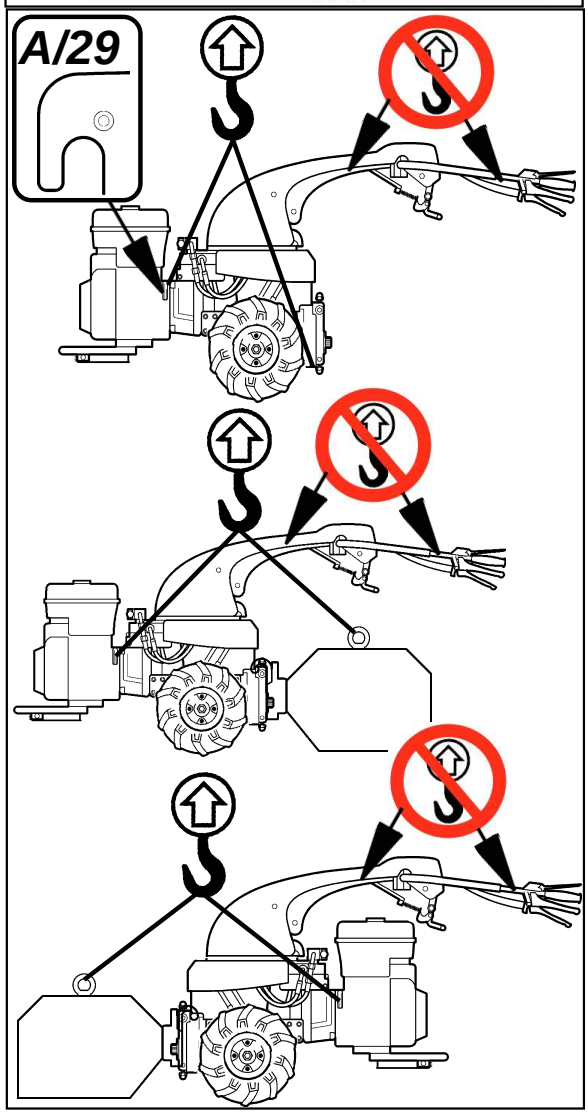
Steering Handle Swinging Buffer

The steering handle is rubber-cushioned, the optimum damping effect is achieved if the 2 cushion stops at the front of the lower bar are set in such a way that in a neutral position, with the bar unstressed, on each side a gap of ***A = 0,2 mm*** *is maintained.*

Another setting can be made here as required individually.

Adjustment:

- *Loosen hex. screw (2)*
- *Adjust cushion stop (1) by turning in the direction of the above mentioned gap*
- *Re-tighten hexagonal nut (fix with lock-nut)*



Lifting point

There are hooks on both sides of the engine flange (A/29) for the attachment of straps for loading or clamping.

Attachment points:

- *Machine without implement:*

Strap on the hooks (A/29) and strap around the PTO-drive housing

- *Machine with mounted implement:*

Strap on the hooks (A/29) and strap on the implement.

In order to avoid damage to the electrics on the lower bar and on the swinging bar bearing, do not attach loading and clamping straps on the lower bar and steering.

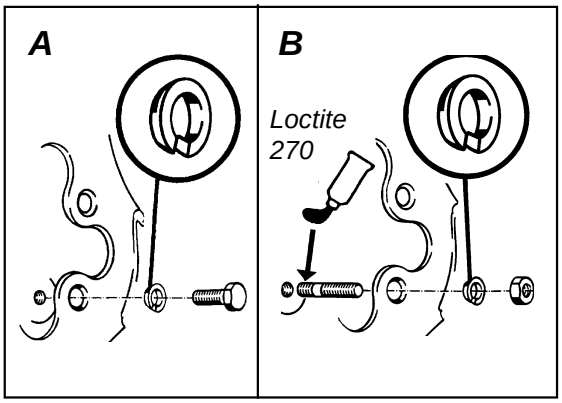
Drive-Wheels

For full tractive power, mount wheels with pointed parts of lugs showing in driving direction (wheels seen from above). Fit the countersunk side of spring-lock washer into countersink-type holes of disk wheel (see fig. "Wheel Attachment Bolts").

The wheels can also be mounted either on their inner or outer sides for variable track widths (narrow track / wide track – refer to track widths table, p 16).

ⓘ ***To avoid damage to the brake system:***

- ***Spring washer with ball-shaped side absolutely required.***
- ***Only use screw of original length.***



Wheel Attachment Bolts

*Version **A** wheel bolt with spring-lock washer.*

*Version **B** locking bolt with spring-lock washer and wheel nut.*

- *Screw short thread end of locking bolt tightly into hub, if possible, glue with LOCTITE 270 (or similar glue).*
- *Fit countersunk side of spring-lock washer onto disk wheel.*

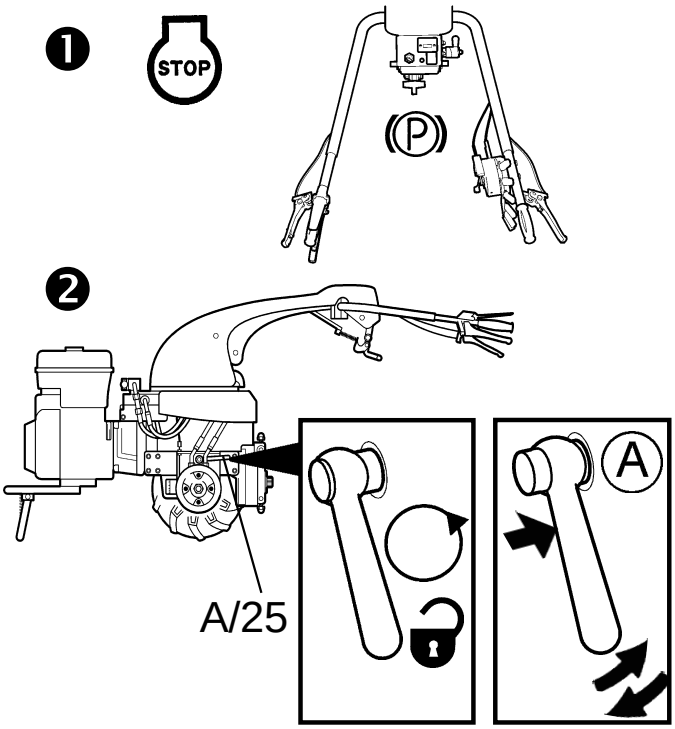
*On a new machine or after wheel change, re-tighten wheel bolts and nuts after the first 2 operating hours with **100** Nm. Re-tighten bolts and nuts in each maintenance.*

Snow Chains

When working with snow chains fitted on wheels, observe manufacturer's instructions, make sure there is sufficient clearance between chains and machine parts.

Drive-Wheels for Slopes

ⓘ *It is recommended to use twin wheels or strake wheels for mowing areas on **extremely steep slopes**.*



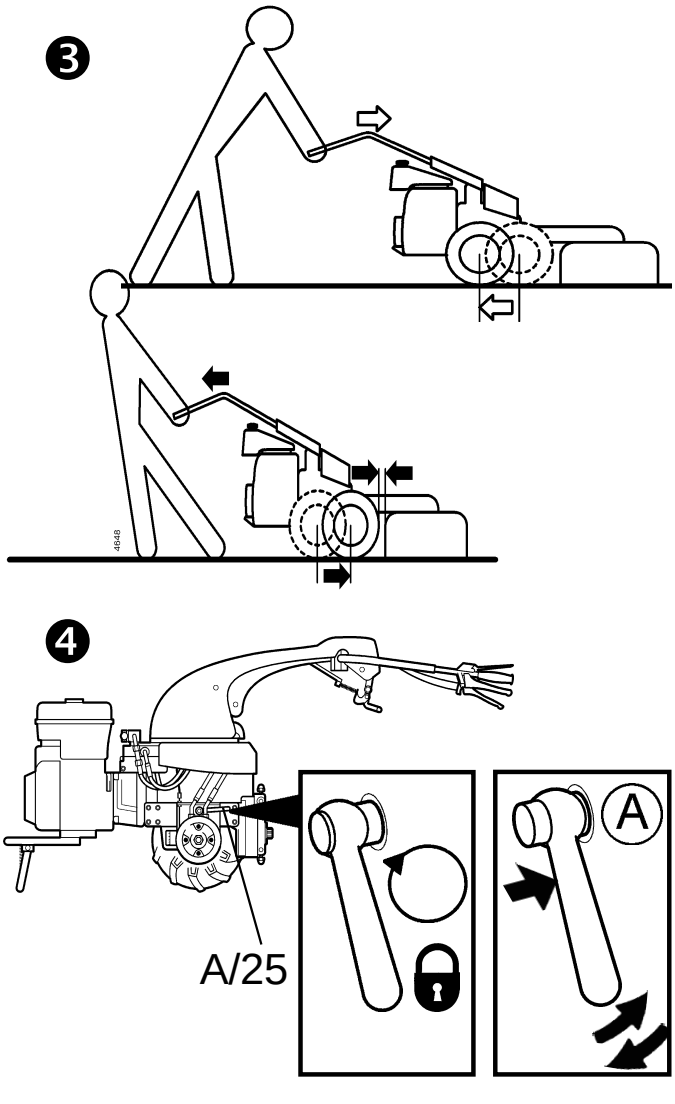
Continuous portal axle adjustment *for counter-balance against the attached implement*

⚠ ***Only adjust with engine off.***

❶ *Pull parking brake* Ⓟ

❷ *release the clamping levers (A/25) on both sides in a counter clockwise direction*

- Ⓐ to adjust the handle, press this axially towards the centre - until it unlocks - while turning.



❸ *Pull machine back or move machine forward on steering handle*

ⓘ *Adjustment is best carried out with no implements attached: Tip machine backwards and forwards.*

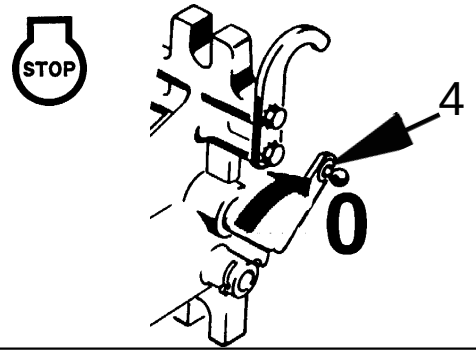
ⓘ *Min. clearance to attachment for drive wheels 20 mm!*

❹ *tighten the clamping levers (A/25) on both sides in a clockwise direction*

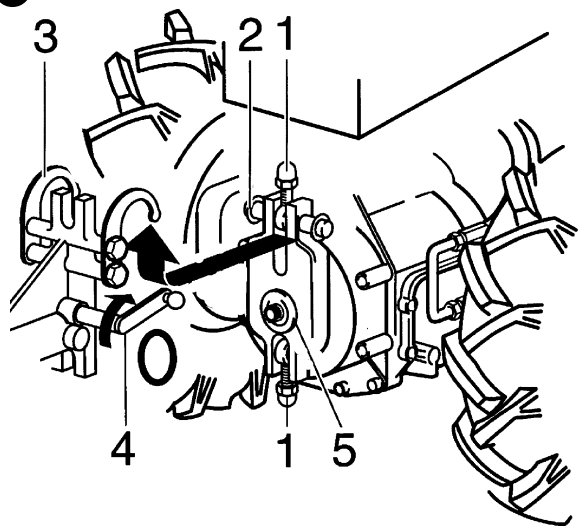
- Ⓐ to adjust the handle press this axially towards the centre - until it unlocks - while turning.

❗ ***Check before every use whether the handle screws for the axle adjustment have been tightened.***

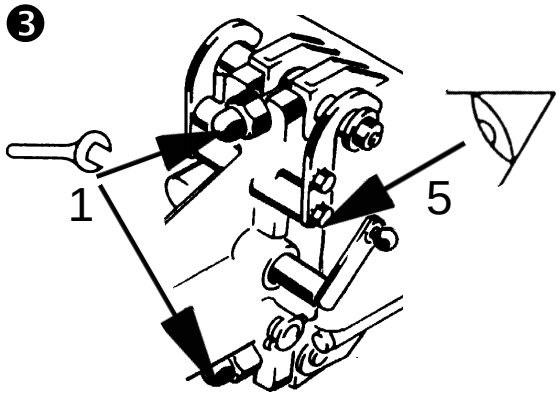
❶



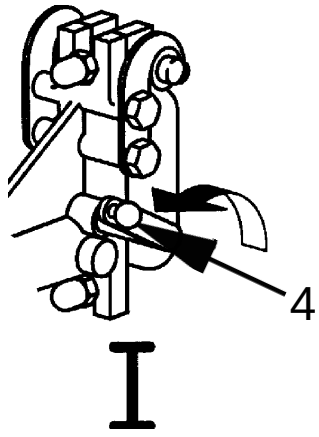
❷



❸



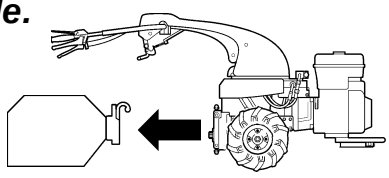
❹



Mounting and Dismounting Implements

Only mount and dismount implemens with engine off.

The mounting and dismounting of implements is best carried out if the steering bar is turned to two-wheel tractor position (steering bar end pointing in the direction of attachment flange)
- the mounting process is thus better visible.



Mounting Implements:

- *Ensure that coupling surfaces on two-wheel tractor and implement are clean.*

❶ *For PTO driven implements, set shift lever (4) on implement to position* "**0**".

❷ *Slide pegs (2) of base machine into hooks (3) of implement.*

❸ *Fold both eye bolts (1) over coupling flange.*

Attention:

- *Make sure flanges (5) are properly centred and flat fitted.*
- *Tighten cap nuts evenly.*

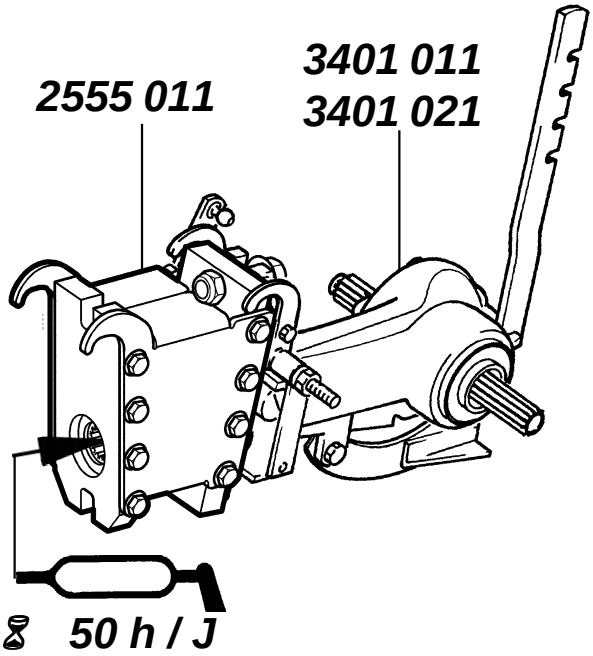
❹ *For PTO-driven implements: Set shift lever (4) at the implement to* "**I**" *– shifting takes place at the base machine.*

***For dismounting**, proceed in reverse order.*

Implements

Hoeing drive:

Only mount model 2501 011 or current hoeing drives 3401 011, 3401 021 together with adapter 2555 011!



Montage:

Screw together hoeing drive 3401 011 or 3401 021 with adapter 2555 011 as per Fig. using 2 M14 screws, plates and securing nuts.

Maintenance:

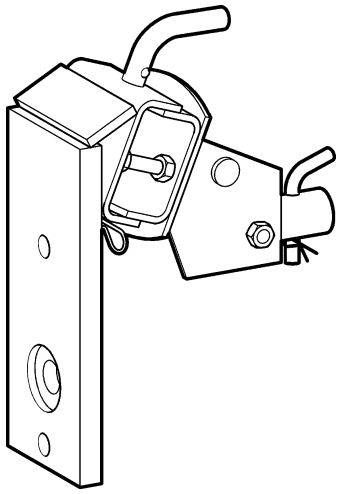
- *Transmission*

see operating instructions hoeing drive 3401 xxx

- *Lubricate drive shaft in the adapter 2555 011 after every **50** operating hours or at least 1x per year on the grease nipple through the connecting sleeve. To do this turn the connecting sleeve so far that the grease nipple is in the middle when seen through the sleeve.*

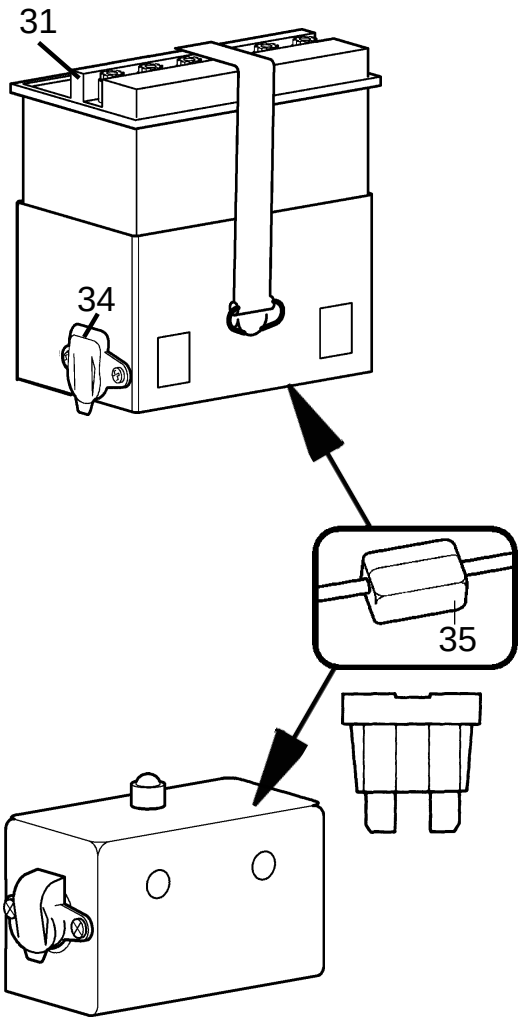
Pulled agricultural implements:

2540 011



Plough, ridger, harrow, cultivator and breakers must be mounted using the attachment device 2540 011.

The attachment device is mounted on the two-wheel tractor as described under "Mounting and dismounting of Implements". The implements (plough, harrow etc.) are then mounted onto the attachment device as described in each of the attached operating instructions.



31 Battery
34 Trailer socket (vers. petrol engine)
35 Flat plug-type fuse holder in the battery box or trailer socket box (vers. petrol engine)

Battery

(Version electric starter)

There is no dry pre-charging of batteries on the new machines or trailers. Therefore the battery must be filled with accumulator acid and charged (charging current =1/10 of battery capacity).

Note manufacturer's instructions!

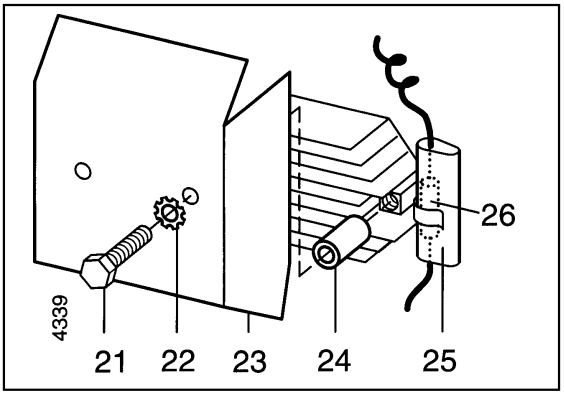
Fuse

Vers. petrol engine

To protect the regulator and generator from a short circuit induced from outside, a fuse (35) is incorporated:

- *for the electric starter version in the battery box*
- *for the recoil starter version in the trailer socket box.*

Replace the fuse if it is defective. To do this, open the fuse holder - ensure to provide another spare fuse in time.



Fuse

Vers. diesel engine

A 15 amps fuse (D/26) is located between the regulator and electric starter to protect the regulator and generator from a short circuit induced from outside.

Replace the fuse if it is defective. To do this, remove the panel (23) and open the protective bracket (D/25). Inside this bracket you will find a spare fuse. Ensure to provide another spare fuse in time.

Commissioning

Please note that durability and operational safety of the engine depend to a large extent on its breaking-in. Always allow a cold engine to warm up for some minutes and never run it at full throttle at the beginning.

*Please note: for the first **20** hours of operation (break-in period) do not use the engine at full power.*

Make sure you check and maintain air filters regularly and use clean fuel. Only use branded petrol.

Only use fresh, clean fuel (not older than 3 months) and approved fuel cans to be purchased in special shops. Rusty sheet metal cans or fuel cans not suited for petrol are not permitted.

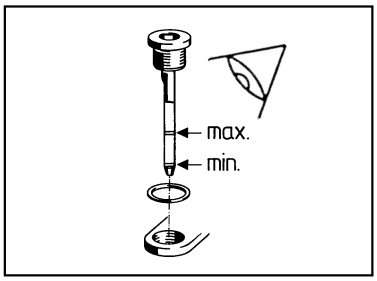
For the first commissioning or after longer periods of no operation, fill fuel tank to maximum to avoid starting problems.

Be careful when dealing with fuel.

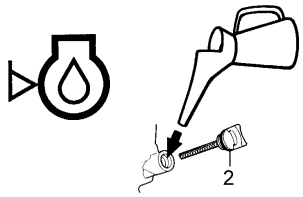
Fuel is easily inflammable and explosive in certain conditions!

- ***Do not refill in closed rooms.***
- ***Before each fuel fill, shut off the engine and wait until it has cooled off.***
- ***Never refill close to open fire, inflammable sparks or hot engine parts.***
- ***Do not smoke during filling!***
- ***Do not spill any fuel, use a proper filling device.***

Do not cause fuel tank to overflow, but leave a 5 mm margin for the fuel to expand.

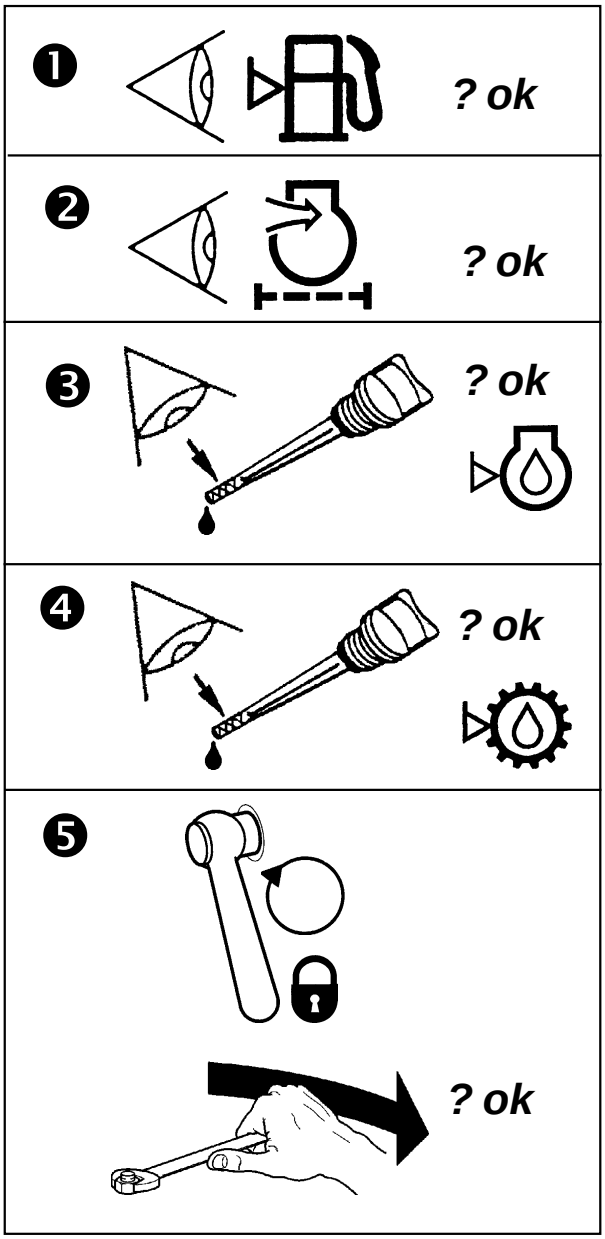


- ***Check transmission oil level*** ➡ 50



***Note:** For reasons of transport, the engine is not filled completey with engine oil!*

Before you operate the engine the first time, fill in engine oil ➡ 43, ➡ 45!

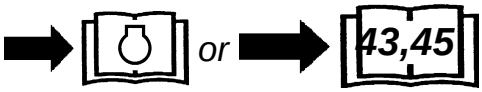


Before starting the Engine

❶ *Sufficient fuel is filled into the tank?*

❷ *Air filter clean?*

❸ *Check the engine oil level*



❹ *Check transmission oil level*

❺ *Check all bolts and nuts for tight fit, especially clamping levers for axle adjustment*

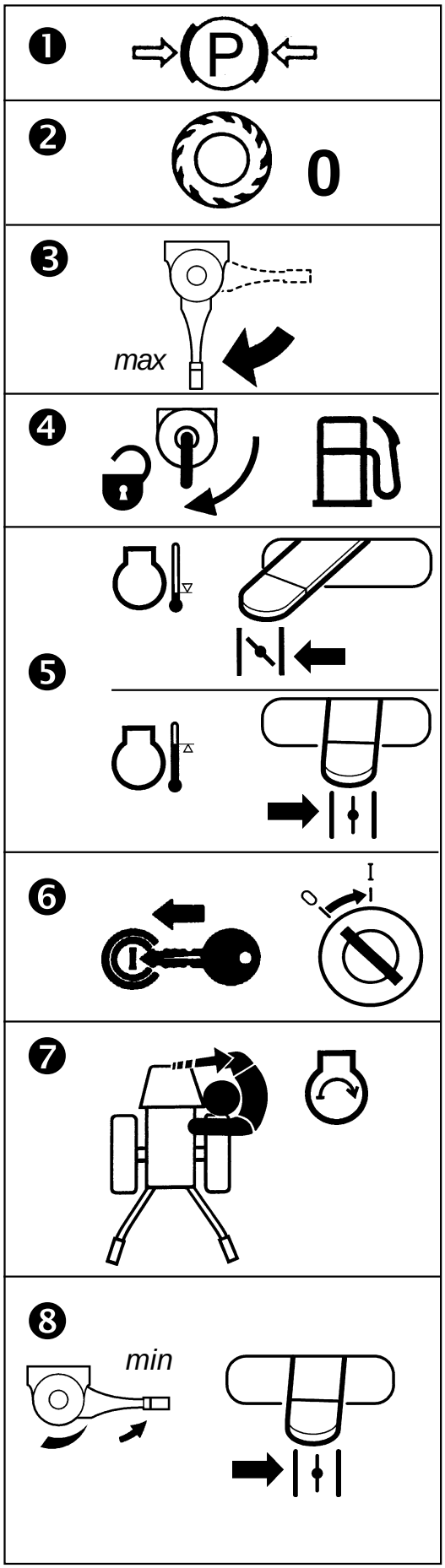
Only take machine into operation with all protective devices mounted and positioned to provide protection!

Careful when starting the engine in closed rooms!

Ensure good ventilation and fast escape of exhaust fumes. Exhaust fumes contain carbon monoxide which acts toxic when inhaled.

Do not touch the hot engine - danger of burns!

Petrol engine: Do not touch or remove the ignition line and spark plug connector while the engine is running.



Starting Petrol Engine Recoil Starter Version

❶ *Engage the parking brake (B/7)*

❷ *Set driving speed (B/5) to "* **0***"*

❸ *Set speed control lever (B/6) to max.*

❹ *Open the fuel tap (C/13)*

❺ ***Cold engine:*** *put CHOKE lever (C/20) to "CHOKE" position*

- ***Warm engine:*** *leave CHOKE lever in normal operating position*

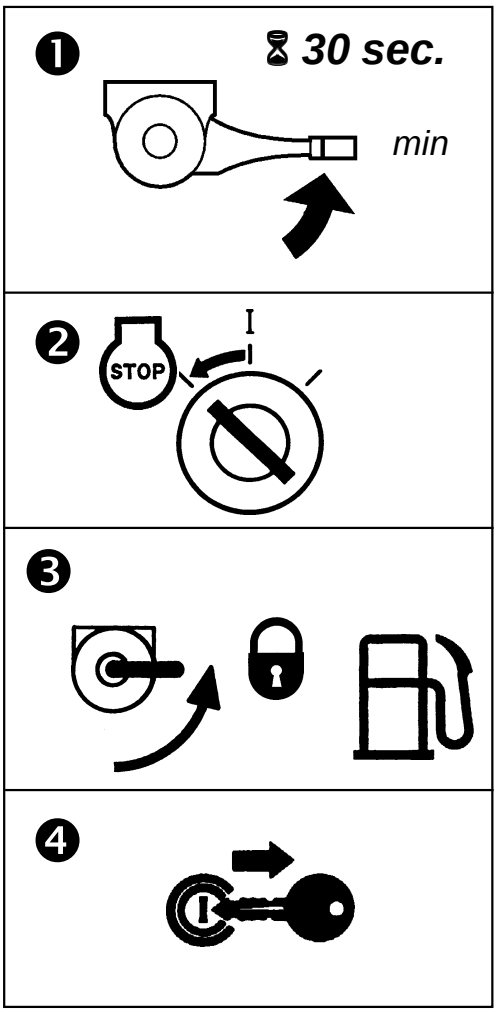
❻ *Insert ignition key (B/10) and turn to "***I***"*

❼ *Start engine from a position outside the danger zone:*
Pull starting-rope on handle (C/6) until you feel starter clutch engage. Then ***pull hard and fast*** *to start the engine. After the start, carefully let rope glide back. Do not let snap.*

ⓘ ***Trailing is not permitted!***

❽ *Once the engine has started, set speed control lever to min. and let engine warm up for some time. Slowly push choke back into operating position, if necessary.*

Shutting off Petrol Engine
Recoil Starter Version



❶ *Set speed control lever to idle position and let engine run idle for approx. half a minute.*

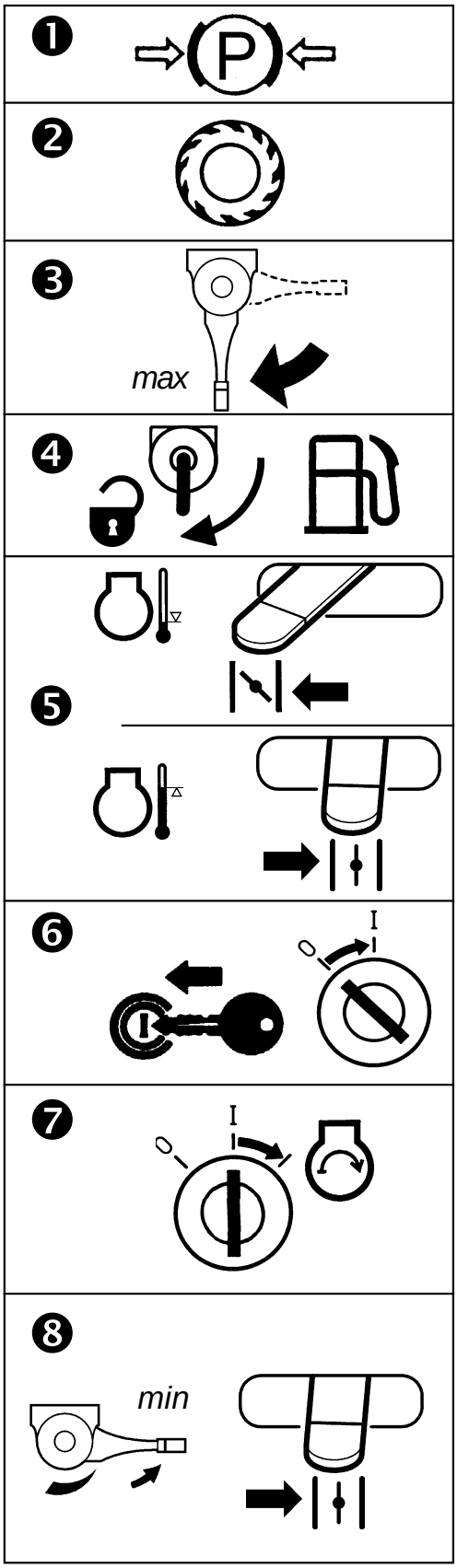
❷ *Set ignition key to position* STOP

❸ *Close the fuel tap (C/13)*

❹ ***Secure two-wheel tractor against unauthorized use – disconnect ignition key.***

ⓘ *The ignition key (B/10) also serves as* ***emergency off-switch****. If necessary, set switch to position* STOP *to turn engine off.*

ⓘ *For parking the machine for longer periods of no operation, do not use ignition key to shut off engine, but close fuel tap and let engine run until it slowly comes to a complete stop. This ensures carburetor to be empty and no resin residue to deposit. Turn ignition key back to position* STOP *and disconnect.*



Starting Petrol Engine E-Starter Version

❶ *Engage the parking brake (B/7)*

❷ *Set driving speed (B/5) to "* **0***"*

❸ *Set speed control lever (B/6) to max.*

❹ *Open the fuel tap (C/13)*

❺ ***Cold engine:*** *put CHOKE lever (C/20) to "CHOKE" position*

- ***Warm engine:*** *leave CHOKE lever in normal operating position*

❻ *Insert ignition key into ignition lock (B/10) and turn on "***I***"*
- even when started using the reverse starter.

- *Warning signal sounds.*

❼ *Turn ignition key further to the right to position* ⟳ *(Start)*

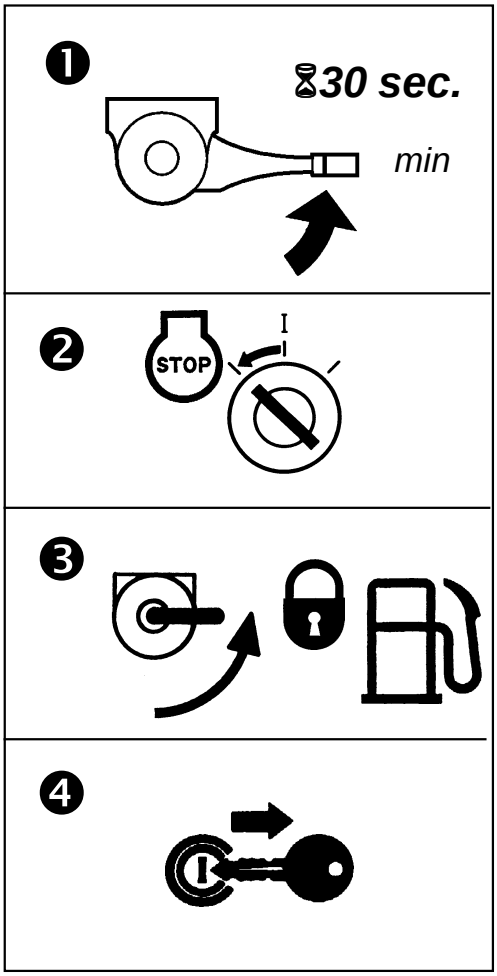
*As soon as the engine starts, let go ignition key – it automatically moves back into position "***I***" and the warning signal goes out.*

ⓘ ***Trailing is not permitted!***

*As soon as the engine starts, let go ignition key – it automatically moves back into position "*I*" and the warning signal goes out.*

❽ *Once the engine has started, set speed control lever to min. and let engine warm up for some time. Slowly push choke back into operating position, if necessary.*

Shutting off Petrol Engine E-Starter Version



❶ *Set speed control lever to idle position and let engine run idle for approx. half a minute.*

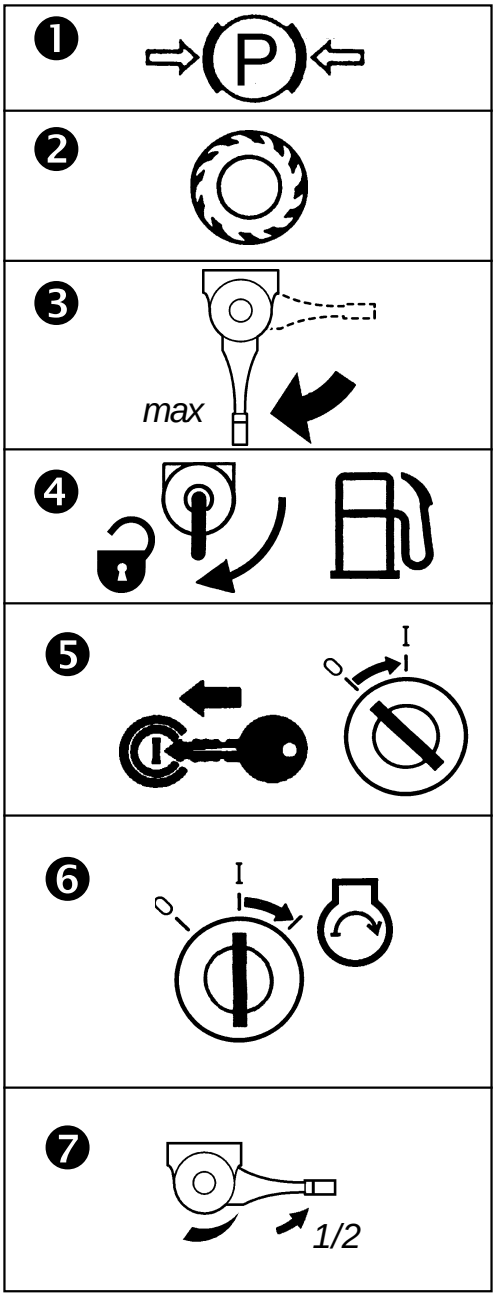
❷ *Turn key back to position* (STOP) *warning signal goes out.*

❸ *Close the fuel tap (C/13).*

❹ ***Secure two-wheel tractor against unauthorized use – disconnect ignition key.***

ⓘ *The ignition key (B/10) also serves as* ***emergency off-switch****. If necessary, set switch to position* (STOP) *to turn engine off.*

ⓘ *For parking the machine for longer periods of no operation, do not use ignition key to shut off engine, but close fuel taps and let engine run until it slowly comes to a complete stop. This ensures carburetor to be empty and no resin residue to deposit. Turn ignition key back to position* (STOP) *and disconnect.*



Starting Diesel Engine E-Starter Version

❶ *Engage the parking brake (B/7)*

❷ *Set driving speed (B/5) to "* **0***"*

❸ *Set speed control lever (B/6) to "max.".*

❹ *Open the fuel tap (D/3).*

❺ *Insert key into ignition-start-switch (D/33) and turn right to position "I" - even when started using the reverse starter.*

- *Warning signal sounds.*

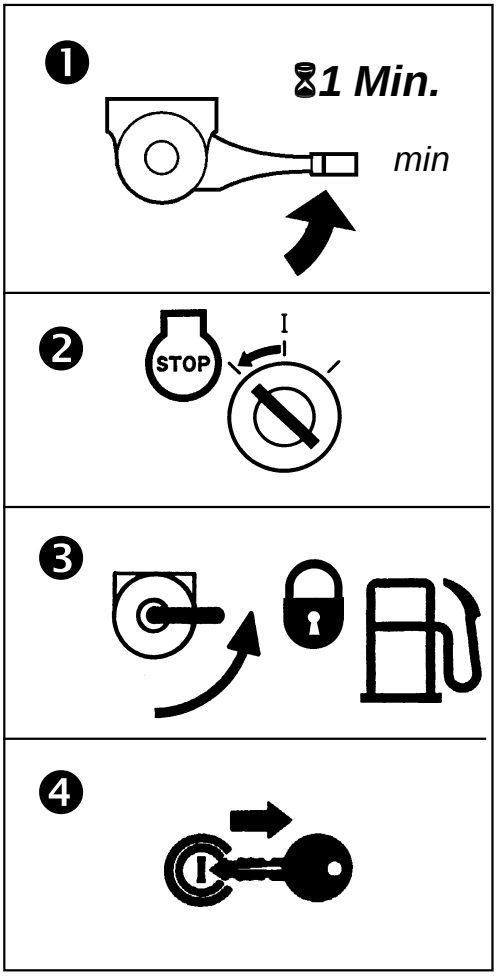
❻ *Turn ignition key further to the right to position "START".*

As soon as the engine starts, let go ignition key – it automatically moves back into position "I" and the warning signal goes out.

Trailing is not permitted!

❼ *Slowly move speed control lever to centre position (half throttle) and let engine warm up for some time.*

Shutting off Diesel Engine E-Starter Version



❶ *Set speed control lever to idle position and let engine run idle for approx. one minute.*

❷ *Turn key back to position* STOP

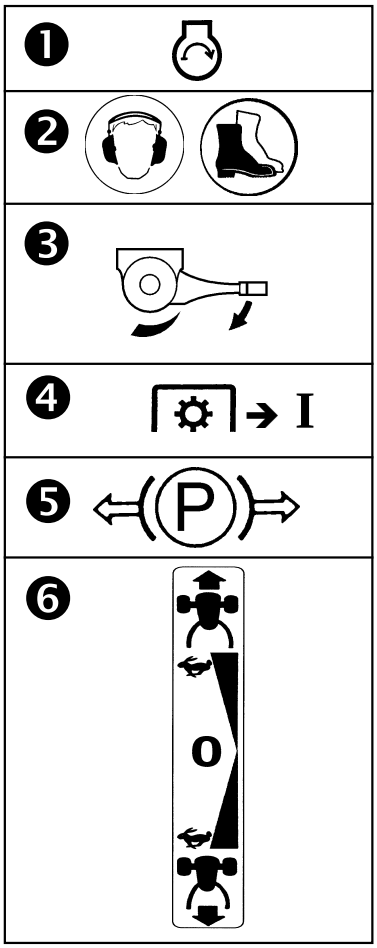
- warning signal goes out.

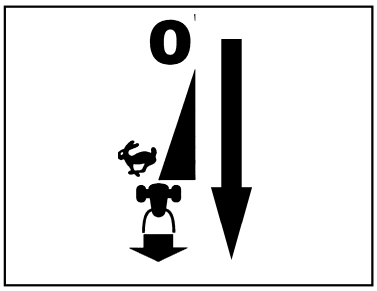
❸ *Close the fuel tap (D/3).*

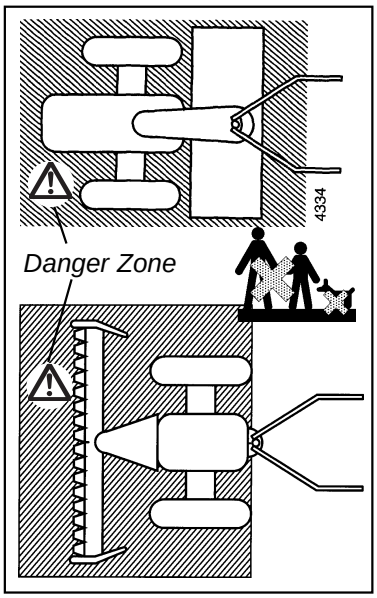
❹ ***Secure two-wheel tractor against unauthorized use – remove ignition key.***

ⓘ *The ignition key (B/10) also serves as* ***emergency off-switch****. If necessary, set switch to position* STOP *to turn engine off.*

ⓘ *For parking the machine for longer periods of no operation, do not use ignition key to shut off engine, but close fuel taps and let engine run until it slowly comes to a complete stop. This ensures carburetor to be empty and no resin residue to deposit. Turn ignition key back to position* STOP *and disconnect.*







Operating the Machine

Check safety circuit function - Only operate the machine if, safety circuit works!

❶ *Start the engine as specified in chapter "Starting the Engine"*

❷ *Wear individual protective ear plugs and solid shoes*

❸ *Accelerate*

❹ *For operation with PTO-powered attachments: Switch on PTO using the PTO shifting mechanism (B/8)*

❺ *Release the brake*

❻ *Set driving speed with the driving lever (B/5) according to the conditions and requirements*

Changing the driving direction from forward to reverse:

Slowly move driving lever (B/5)to the rear bottom.

Proceed vice versa for direction change from reverse to forward.

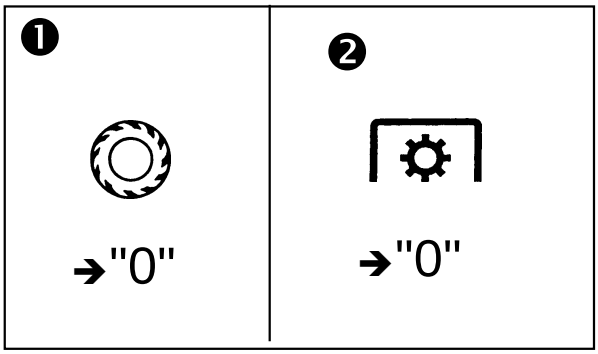
Never leave two-wheel tractor unattended with the engine running.

Danger Zone

Keep out of the machine's danger zone during starts and operation.

If the operator should notice that a person or animal is staying within this area, the machine must be shut down without delay and must not be operated again before the area is free again.

The user is liable to third parties working within the ride-on brushcutter's working range.

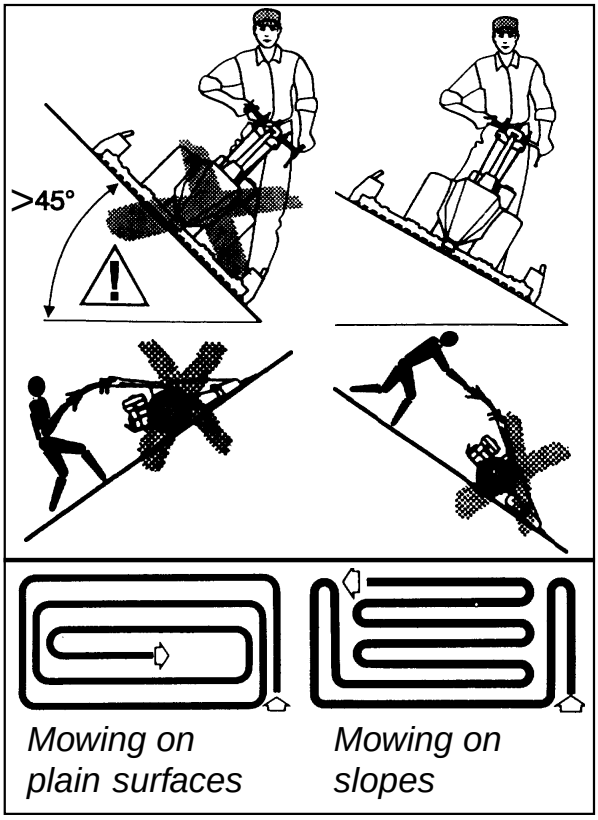


Note for Mowing

After mowing or in case of grass clogging:

❶ *Set driving lever to idle-position. The machine comes to a stop but not the knives, thus freeing the cutter bar from grass.*

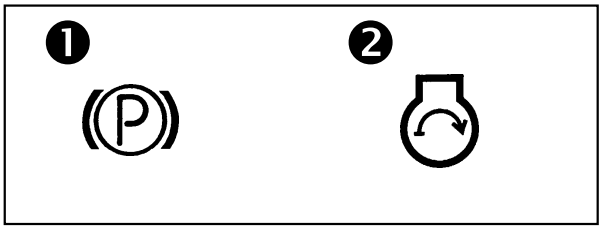
❷ *Set PTO shifting mechanism to position "0".*



Working on Slopes

To prevent the machine from sliding on slopes make sure it is secured by another person using a bar or a rope. This person must stay at a higher position than the vehicle and at a safe distance from the attachment at work.

If possible, always work across the slope.

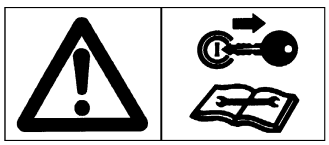


Starting the Engine on Slopes

If the engine comes to a halt while working and re-start becomes necessary, proceed as follows:

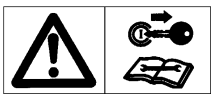
❶ *Engage parking brake*

❷ *Re-start engine.*



If cleaning becomes necessary during operation, the engine must be shut off and the ignition key removed for safety reasons.

Apart from observing all operating instructions, it is also important to pay attention to the following maintenance instructions.

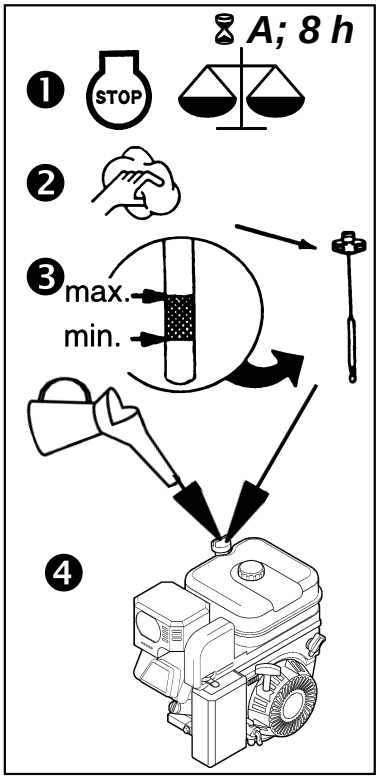


Only do all maintenance work with the engine shut off and ignition key disconnected!

Hot surface on the exhaust pipe - only carry out maintenance work when engine has cooled down!

When working on mowing or hoeing knives, wear safety gloves!

Engine



Checking Oil Level

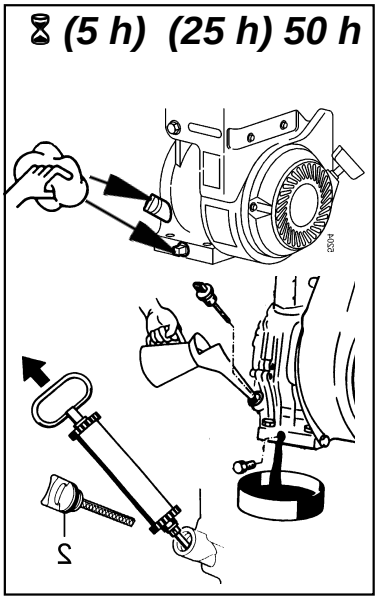
● ***each time you take up operation and after every 8 operating hours,***

❶ *only with engine shut off and in horizontal position.*

❷ *Clean oil dipstick (1) and surrounding parts.*

❸ *Remove oil filler plug, clean dipstick, with a clean cloth and screw into oil tank, take out dipstick and read oil level.*

❹ *In case oil level is below lower mark "min.", refill engine oil (refer to “Specifications”) until oil level reaches mark "max.".*



Changing Engine Oil

The first oil change is after 5 operating hours, *after that change the oil under high loads after every* ***25*** *operating hours, otherwise every* ***50*** *operating hours or before the season starts*

- while engine is still warm, but not hot
- danger of burns!

●*Clean oil filler plug, drain plug and surrounding parts.*

● *Open the drain plug and drain the oil into a suitable container or use a suction pump to remove the oil through the filler neck.*

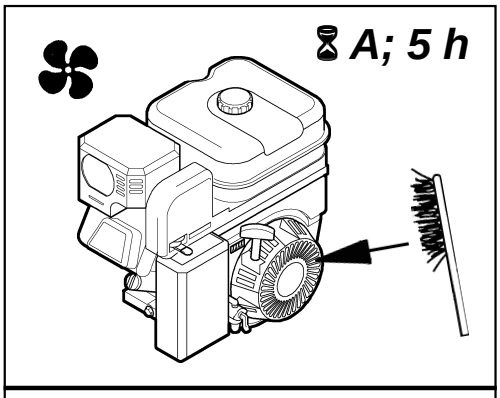
● *Ensure the waste oil is disposed of properly!*

Check sealing washer for good condition and exchange, if necessary. Tighten oil drain plug!

Fill in fresh engine oil.

- For engine oil quality refer to “Specifications”.

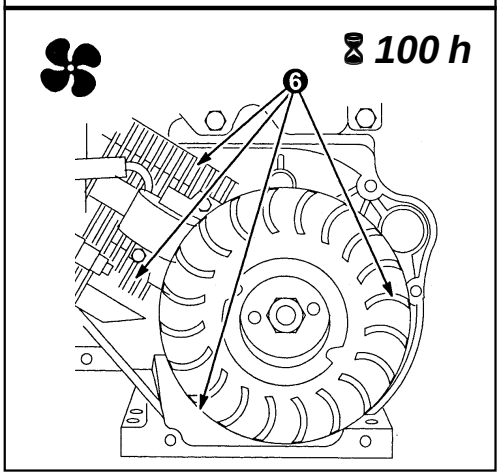
5



Cleaning the Cooling System

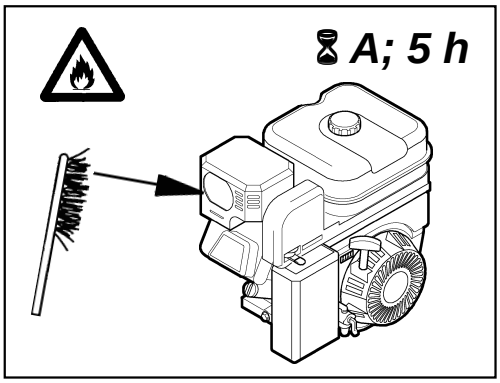
After mowing for longer periods of time, clogging of plants and dust may occur in the cooling system. Sustained operation with the cooling system clogged lets the engine heat up and causes damage.

- *Always check cooling-air screen (C/5) and remove dirt and plants sucked in.*



- *Clean fan system after every **100** hours of operation or at least **once per year**, preferably before the season starts. Take off fan case and clean cooling fins on both, cylinder and cylinder head, clean guiding plates and cooling-air screen (❻), both serving for good air circulation.*

→agria - Service←



Exhaust System

*Check exhaust system (C/18) on a regular basis for plant trash and clean, if necessary. Otherwise **danger of fire** results.*

Check each time before you put the two-wheel tractor into operation.

All other maintenance on the engine

➡ *Briggs & Stratton Engine*

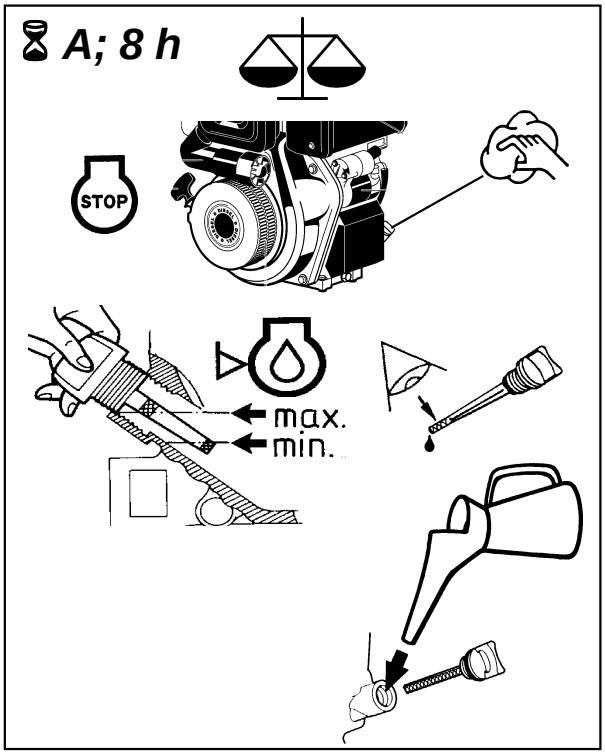
5

Apart from observing all operating instructions, it is also important to pay attention to the following maintenance instructions.Please note:

Only do all maintenance work with the engine shut off and spark plug connector disconnected.

When working on mowing knives, wear safety gloves!

Engine



Checking Oil Level

- ***Each time you take up operation and after every 8 operating hours.***
- *Check only with engine switched off and machine in horizontal position.*
- *Clean oil dip stick and surrounding parts.*
- *Unscrew the oil dip stick, clean the dip-stick with a clean rag, re-insert it all the way and screw it in.*
- *Unscrew the oil dip stick and read the oil level.*
- *Refill oil, if the oil level is below the lower dip-stick mark. Refill engine oil (see "Specifications") up to upper level mark on dip-stick; do not overfill!*

5

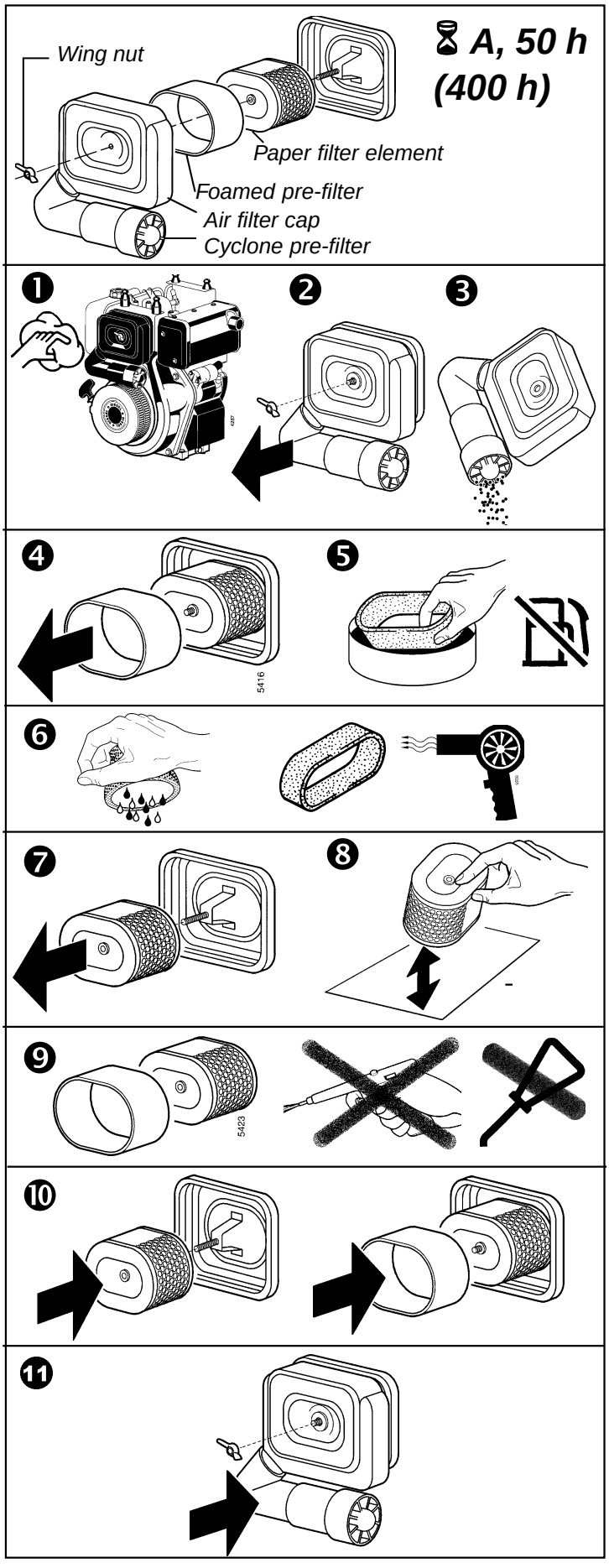
Changing Engine Oil

*The first oil change is **after 50 operating hours**. Subsequent oil changes are after **200** operating hours or **once a year**, depending on which period is completed first. At extreme strain and high temperatures, change oil after **100** operating hours while the engine is still warm, but not hot – **danger of burns!***

- *Clean oil filler plug, drain plug and surrounding parts.*
- *Open the filling plug and the drain plug and drain the oil into a suitable container and dispose of properly!*
- *Each time you change engine oil, wash engine oil filter in diesel fuel. Replace damaged filter.*
- *Fill fresh engine oil into the oil filling opening.*

Check sealing washer for good condition and exchange, if necessary!

Refer to Specifications for oil quantity and quality. Use a funnel or a similar device to fill the oil reservoir.



Dry-Type Air Filter

When You take up operation check the air filter (D4) on dirt, clean it if necessary.
*Clean air filter (J/4) after a maximum of every **50** operating hours or at least after **3 months,** in case of heavy dust occurence even earlier.*

❶ *Clean air filter and outside surrounding parts.*

❷ *Remove the wing nut and air filter cap including the cyclone pre-filter.*

❸ *Rotate the air filter cap to allow any dirt inside the cyclone pre-filter drop out.*

❹ *Carefully remove foamed pre-filter.*

❺ *Wash foamed pre-filter in detergent and water (no petrol).*

❻ *Squeeze foamed pre-filter and dry it.*

❼ *Remove paper filter element*

❽ *Sightly tap the element on a smooth surface.*

❾ *Do not use compressed air to blow out dust of foamed pre-filter and paper filter element. Do not treat with oil.*

❿ *Re-insert the filter element and attach the foamed pre-filter.*

⓫ *Reposition air filter cap and fasten with wing nut.*

*Replace paper filter element after every **400** operating hours or **at least once a year.***

ⓘ *Replace immediately damaged filter elements.*

5

Draining fuel

- *Provide a proper container with funnel or similar.*
- *Remove the drain plug (16) and drain the fuel into a proper container.*
- *Re-attach the drain plug (16) with O-ring and tighten it (check the O-ring and replace it if necessary)*

Fuel filter

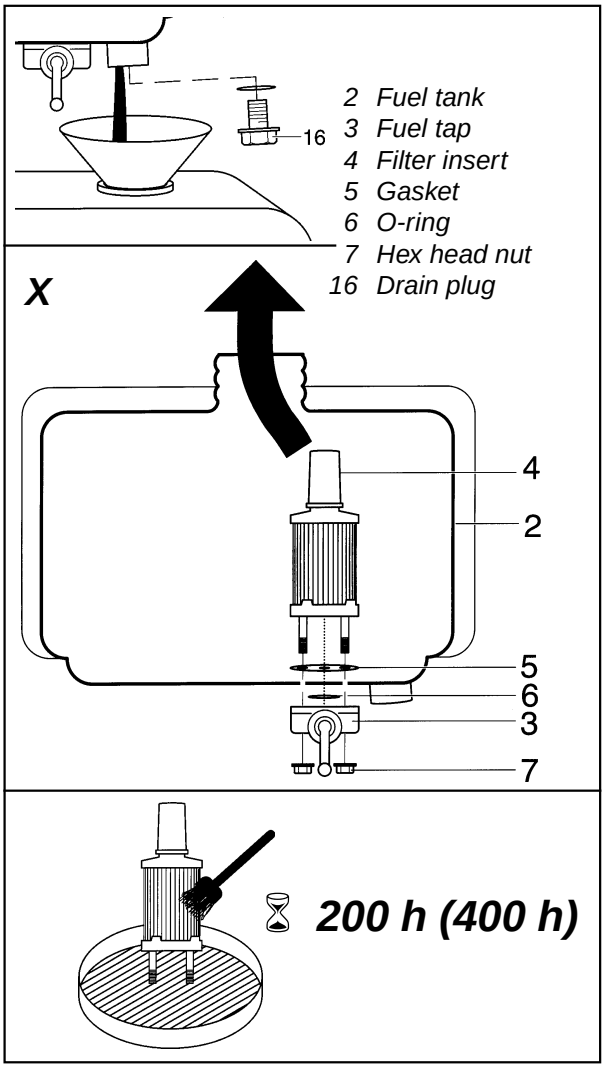
*Clean the fuel filter insert at approx. **200** operating hour intervals, earlier, if engine ouput drops.*

Filter disassembly/assembly:

- *Drain the fuel.*
- *Remove hex head nuts (X/7)*
- *Remove the filter insert (X/4) from the fuel tank through the filling hole.*
- *Clean the fuel filter with diesel oil and replace the insert if it is damaged.*
- *Reverse the above order to reassemble the fuel filter after checking and replacing (if necessary) the gasket (X/5) and o-ring (X/6).*
- *Tighten the hex nuts.*
- *Fill fuel and check the fuel system for leakages.*
- *Bleed the fuel system.*
- *Exchange the fuel filter after **400** hours.*

Fuel Hoses

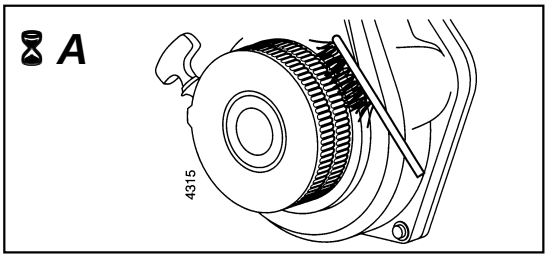
*Exchange after every **2 years**; exchange leaking fuel hoses immediately.*



Bleeding the Fuel System

The engine is equipped with an automatic bleeding system, however after the fuel tank was emptied completely or after exchanging or cleaning the fuel-filter/fuel hoses proceed as follows:

- *Fill diesel fuel into fuel tank.*
- *Crank engine several times with recoil starter or electric starter and start engine.*
- *Let engine run for approx.1 minute.*

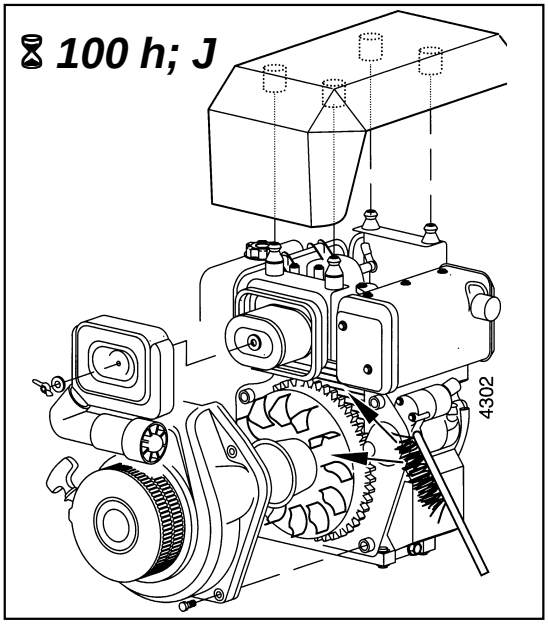


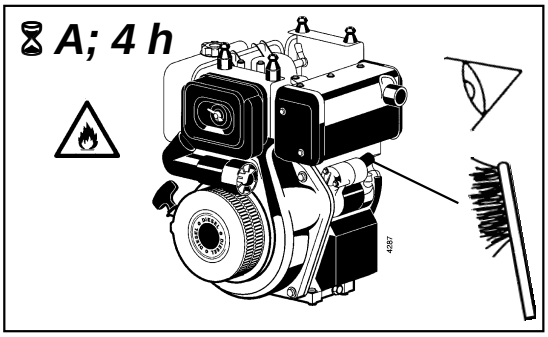
Cleaning the Cooling System

After a long period of operation the cooling system may become clogged by dirt and plant trash. Uninterrupted operation with a clogged cooling system causes the engine to heat up and become damaged.

- *Always check cooling-air screen (D/10) and free from dirt and plant trash taken in.*
- *After every **100** operating hours or at least **once a year** before season starts remove fan case to clean cooling fins on cylinder and cylinder head as well as guiding plates and cooling-air screen, both serving for smooth air circulation.*

→agria - Service←





Exhaust System

*Constantly check exhaust system (D/9) for plant trash and clean, if necessary. Otherwise **danger of fire**!*

5

Re-adjusting Valve Lash

*After every **400** operating hours re-adjust valve lash. Re-adjust outlet and intake valve lash to be 0.15±0.02mm when the engine is cold.*

→agria - Service←

Injection Jet

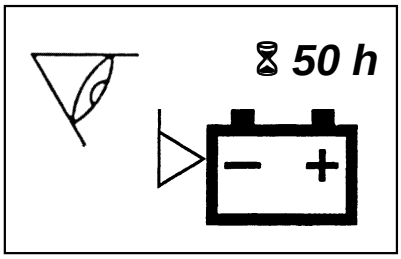
*After every **400** operating hours, clean and check injection jet.*

→agria - Service←

Idling Speed

Always ensure that idling engine speed is adjusted correctly. At low speeds, the engine is supposed to run smoothly, with speed control lever at stop in neutral.

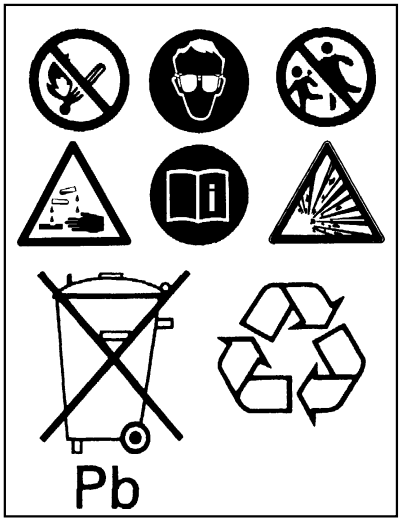
→agria - Service←



Battery (E-Starter version)

There is no dry pre-charge of batteries on new machines, therefore batteries must be totally charged after filling them with accumulator acid (charge current = 1/10 of battery capacity).

If the machine or trailer will not be used for a longer period, the battery must be kept fully charged with a current of 0.06A and checked every 4 weeks and re-charged, if necessary. Before recharge, disconnect negative pole.



Never leave battery in uncharged state.

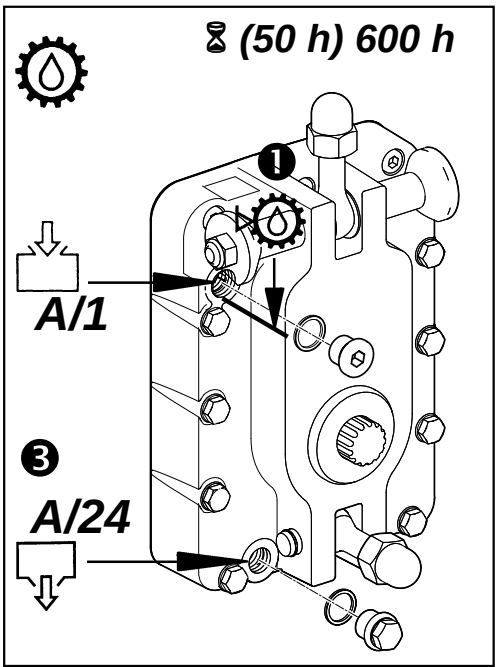
Note manufacturer's instructions. *Avoid sparking and open flames near batteries. Careful when handling battery acid –* ***etching!*** *Only use specified fuses. If fuses are too strong, the electric system will be destroyed –* ***danger of fire!***

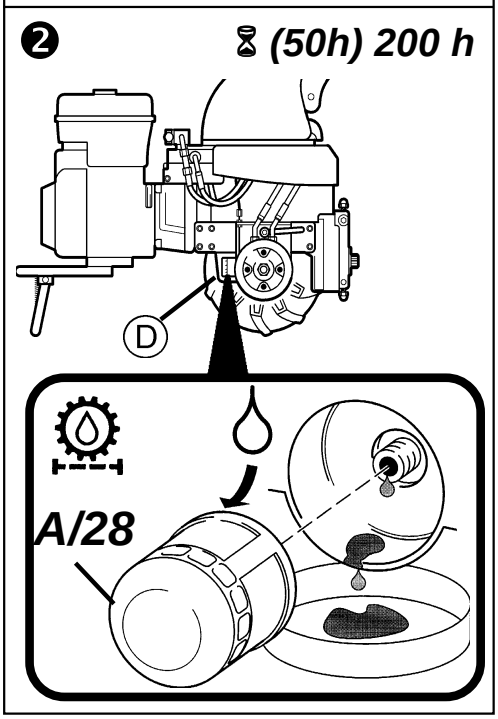
Machine

Transmission

Transmission oil is also hydraulic oil

When changing to Bio hydraulic oil HEES, drain oil filling and twice rinse the system (– see after-sales service information).





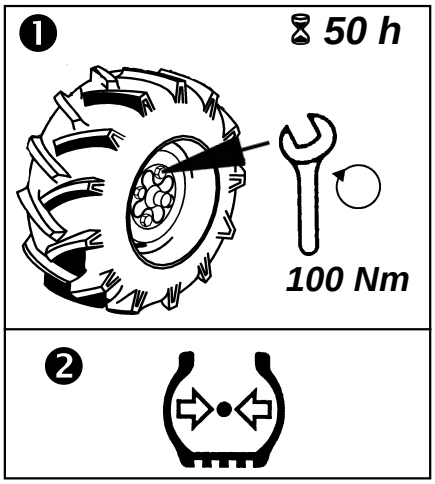
❶ *Check* ***oil level in transmission*** *each time before you take the machine into operation and after every* ***25*** *operating hours. With the machine parked in horizontal position, the oil level must be up to the level of the fillling opening (A/1), refill hydraulic oil, if necessary.*

❷ ***Transmission oil filter change*** *after the first* ***50*** *operating hours and then always after* ***200*** *operating hours*

- *Tilt machine to the rear onto the connection flange*
- *Remove protective cover Ⓓ slightly loosen 4 screws and pull cover off downwards*
- *Screw out oil filter (A/28) and replace it – for new filter, wet the sealing ring with some oil*
- *Replace protective cover*
- *Dispose of oil filter as directed.*

❸ ***Transmission oil change*** *with simultaneous oil filter change after the first* ***50*** *operating hours and after every* ***600*** *operating hours while the engine is still warm.*

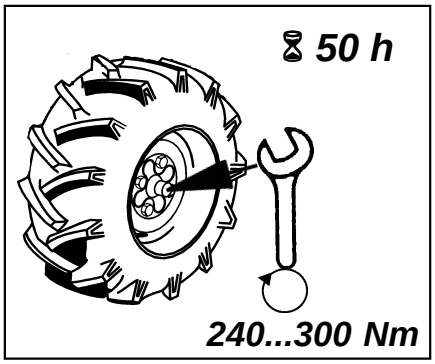
- *Keep oil filler plug (1) and drain plug (4) extremely clean as well as surrounding parts to prevent dirt from penetrating into the transmission.*
- *Open drain plug, collect old oil in proper container and dispose of properly.*
- *Clean drain plug; the drain plug has a magnetic core and therefore attracts metallic powder.*
- *Check sealing rings and exchange, if necessary.*
- *Screw in drain plug with o-ring and tighten.*
- *Fill in fresh hydraulic oil, up to the fillling opening.*
- *For proper oil quantity and quality, refer to chapter “Specifications”.*
- *Close filling opening with plug/dip-stick.*



Drive-Wheels

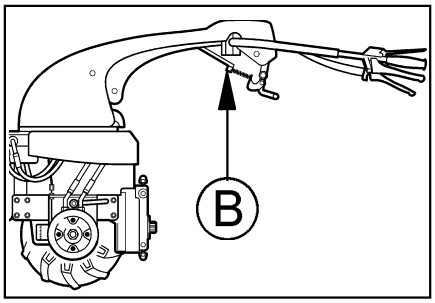
❶ ***When commissioning the machine and each time you change wheels,*** *check and tighten wheel bolts and nuts after the first **2** operating hours with 100 Nm. Proceed likewise when doing maintenance work.*

❷ *Check tyre air pressure regularly. For smooth driving, make sure that there is the same pressure in front and rear tyres respectively.*



Wheel Hubs

● *Always after **50** operating hours, retighten the hex nuts (A/27) on the wheel hubs to 240…300 Nm.*



Brake

*Always after **200** operating hours or at least once per year, check brake jaws and brake operating system for unhindered movement and efficiency.*

Resetting is made using the central adjusting screw Ⓑ on the eccentric lever

➔agria - Service←

Wheel Motors

*Always after **200** operating hours, check for straight driving.*

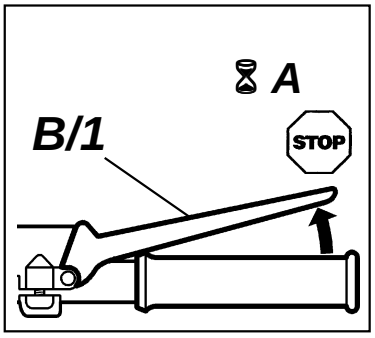
➔agria - Service←

Hydraulic Hoses

*Check hydraulic hoses always after **200** operating hours or at least **once per year** for closeness.*

Safety Circuit

Check safety circuit function each time you take up operation and each time you maintain the machine.

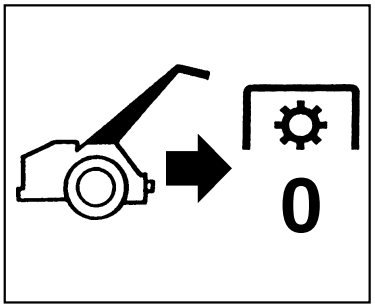


Engine-Stop-Switch

- *With main drive and PTO drive engaged and upon release the lever (B/1), the engine must automatically come to a stop.*

- *Check electric lines, connections, contact switches and relay and exchange, if necessary.*

→agria - Service←

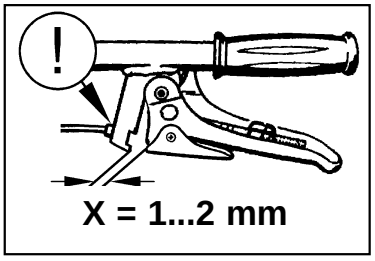


PTO-Reversing Lock

In "two-wheel tractor mode" (rear-mounted PTO-driven equipment) the PTO-drive similarly switches off automatically when travelling in reverse or cannot be switched on (safety circuit).

- *Check electric lines, connections, contact switches and relay and exchange, if necessary.*

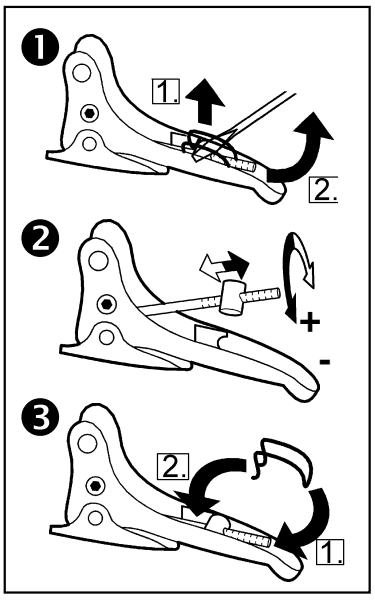
→agria - Service←



Levers

The manual lever for the hydro-steering and bar turning should have a play of X = 1 to 2 mm

- Check each time you operate the machine. If necessary, re-adjust (especially during break-in period after commissioning the machine).

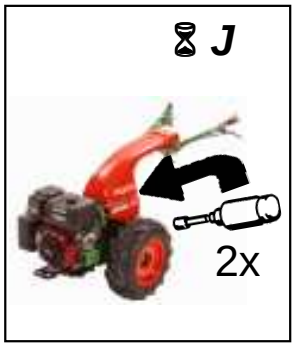


Adjustment:

❶ *Remove retaining spring (2). Remove cable end (3) and set pin (4) out of bracket in hand lever.*

❷ *Adjust the set pin (4) to a play of X in position "0". Screw set pin in to reduce play, screw out to increase play.*

❸ *Place cable end and set pin back into bracket and fit retaining spring (2).*



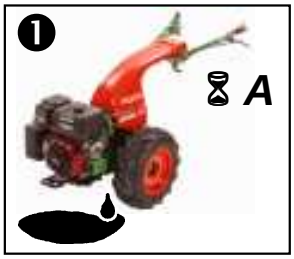
Steering Tower Drag Bearing, Steering Ratchet Bolt

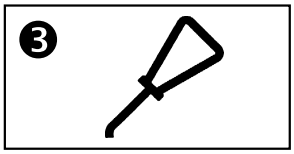
*Lubricate the steering tower drag bearing and the steering ratchet bolt at the lubricating nipples at least **once per year** and after cleaning; for this swing the steering tower to the right by about 45-50°, then the two grease nipples under the casing are accessible.*

Guide Channels for Axle Adjustment

*Thoroughly clean the guide channels at least **once per year** and spray them with a little Teflon spray.*

General Maintenance



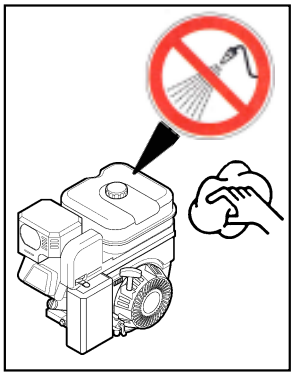


❶ *Every time you take up operation watch out for fuel and oil leakage, repair if necessary.*

❷ *Regularly check bolts and nuts for tight fit, re-tighten, if necessary.*

❸ *At least **once a year** and after cleaning: Slightly grease all gliding and moving parts (e.g. speed control lever, lever bearing, etc.) with bio-lubricating grease and bio-lubrication oil.*

Cleaning



After each cleaning (spraying with water, especially with air-compressed water jets) lubricate all lubrication points, oil and let machine run for a short time to press water out.

Apply grease generously to leave a grease ring around bearings to prevent water, plant sap, and dirt from penetrating.

Clean engine only with a cloth. Avoid spraying with air-compressed water jets, as water might leak into ignition and fuel system causing malfunctions.

Graphic Symbols

Worn and missing stickers with operating and safety instructions must be replaced.

Storage

For longer periods of no operation:

a) Clean thoroughly

Repair paint coat.

b) Spray all shining parts *and the cutter bar with Bio-slushing oil.*

c) Engine preservation

Petrol Engine:

● *Drain fuel completely or fill fuel tank and add fuel stabilizer (agria No. 799 09).* ***- Observe enclosed instructions.***

Let engine run for approx. 1 minute.

● *Change the engine oil.*

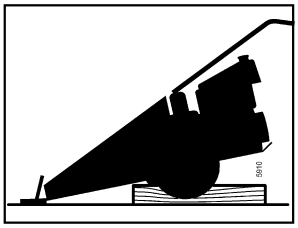
● *Fill a tea-spoon (approx. 0.03l) of engine oil into the spark plug opening. Slowly crank the engine.*

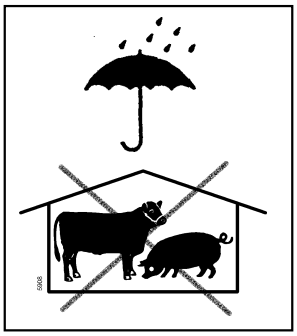
● *Reinstall the spark plug and set the piston to compression via the recoil starter (pull the starter grip until resistance is felt) – valves are closed.*

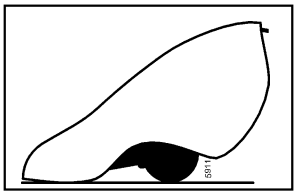
● *Slowly crank the engine after every 2–3 weeks (spark-plug connector is removed). Then set the piston to compression again.*

Diesel Engine:

– Change engine oil.
– For longer storage, close exhaust pipe and air filter opening with crape or similar tape.







d) Drive-wheels

Support drive-wheels in such a way that tyres have no ground contact. Pneumatic tyres are quickly destroyed, if left standing under load and unsupported.

e) Parking

Because of severe corrosion ***do not park the tractor***

- in humid rooms
- in rooms where fertilizer is stored
- in stables or adjacent rooms.

f) Covering the machine

Protect the machine with cloth or a similar cover.

agria Order No.

Fuel Stabilizer for Petrol Engine

799 09	*Fuel stabilizer*	*pouch*	*5 g*

Varnishes

181 03	*Spray varnish birch-green*	*spray tin*	*400ml*
712 98	*Spray varnish red, RAL 2002*	*spray tin*	*400ml*
509 68	*Spray varnish black*	*spray tin*	*400ml*

Glues *(for screw fastening)*

559 94	*Glue (medium) LOCTITE 242*	*bottle*	*50ml*
559 95	*Glue (strong) LOCTITE 270*	*bottle*	*50ml*
559 96	*Glue (ultra strong) LOCTITE 638*	*bottle*	*50ml*

Surface Sealing

509 68	*Surface sealing (liquid) LOCTITE 573*	*tube*	*250ml*

Wear Parts

Petrol Engine Vanguard 13 HP

410 049	*Air filter element*
410 050	*Foamed preliminary filter*
706 09	*Spark plug, Bosch FR8DC*

Diesel-Motor Yanmar L100

415 008	*Air filter element, Yanmar engine*
415 010	*Fuel filter, Yanmar engine*
415 011	*Fuel filter gasket, Yanmar engine*
021 43	*O-ring 14x1.6, Fuel tap, Yanmar engine*
009 16	*O-ring 16x22x1.5, oil drain plug, Yanmar engine*
768 99	*Fuse 15A (30x6.5mm)*

Transmission:

009 16	*O-ring 16x22x1.5, oil dip-stick and oil drain plug*
527 06	*Oil filter cartridge*

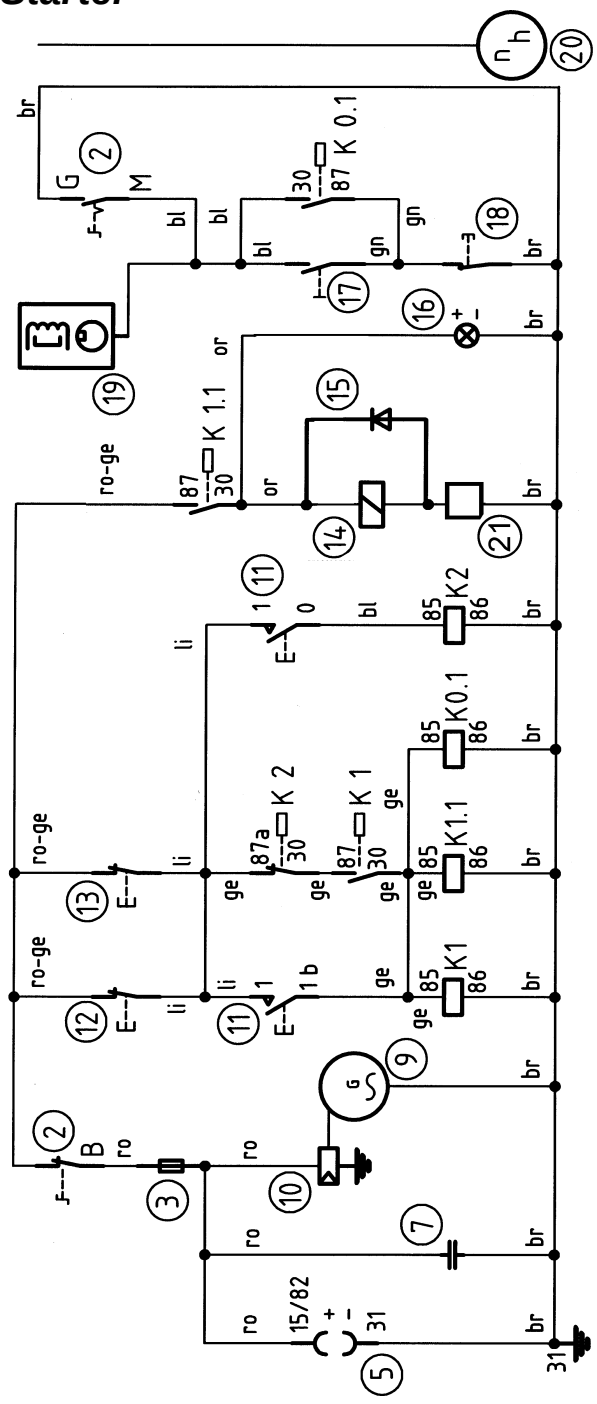
Emergency Tyre Repair:

713 13	*Tyre repair gel*	*Terra-S*	*bottle 1l*

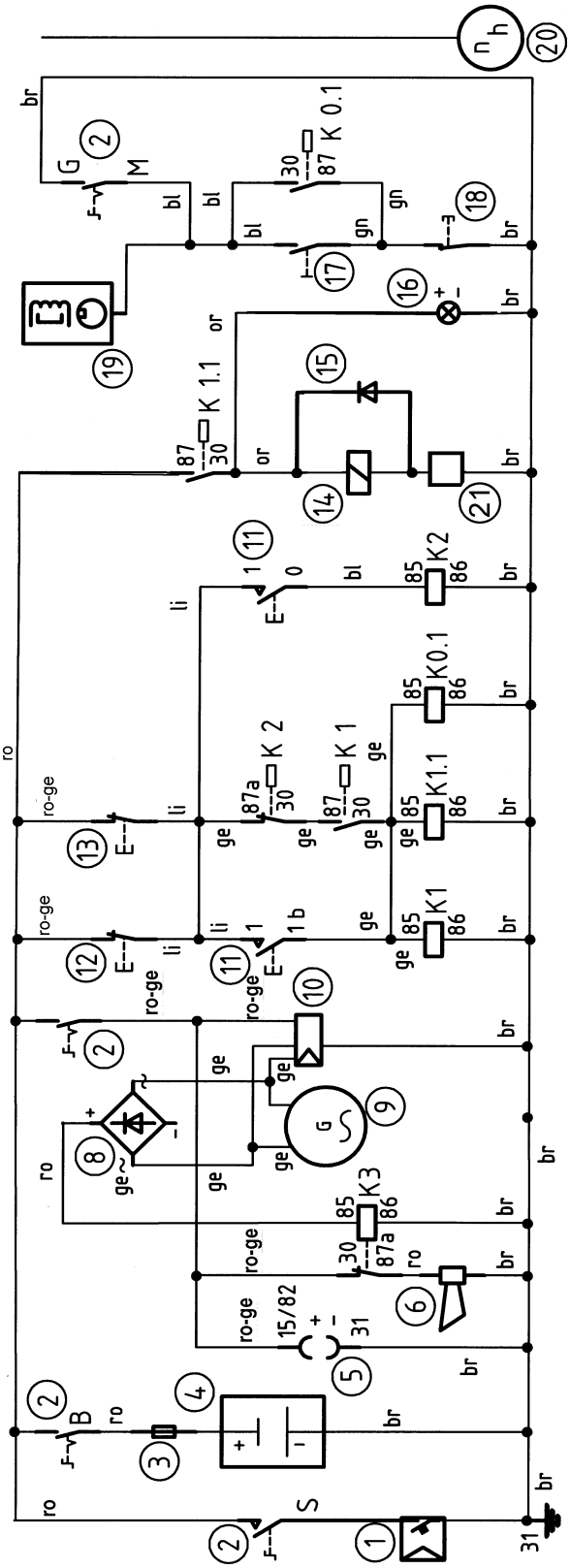
Lists of Spare Parts

997159	*Two-wheel tractor 2500*
997 083	*Implements for 2500, 3400, 5500, 5900*
997 062	*Cutter Bars*
997 137	*Briggs & Stratton Petrol Engine*
997 147	*Yanmar Diesel Engine*

Version Petrol Engine Recoil Starter

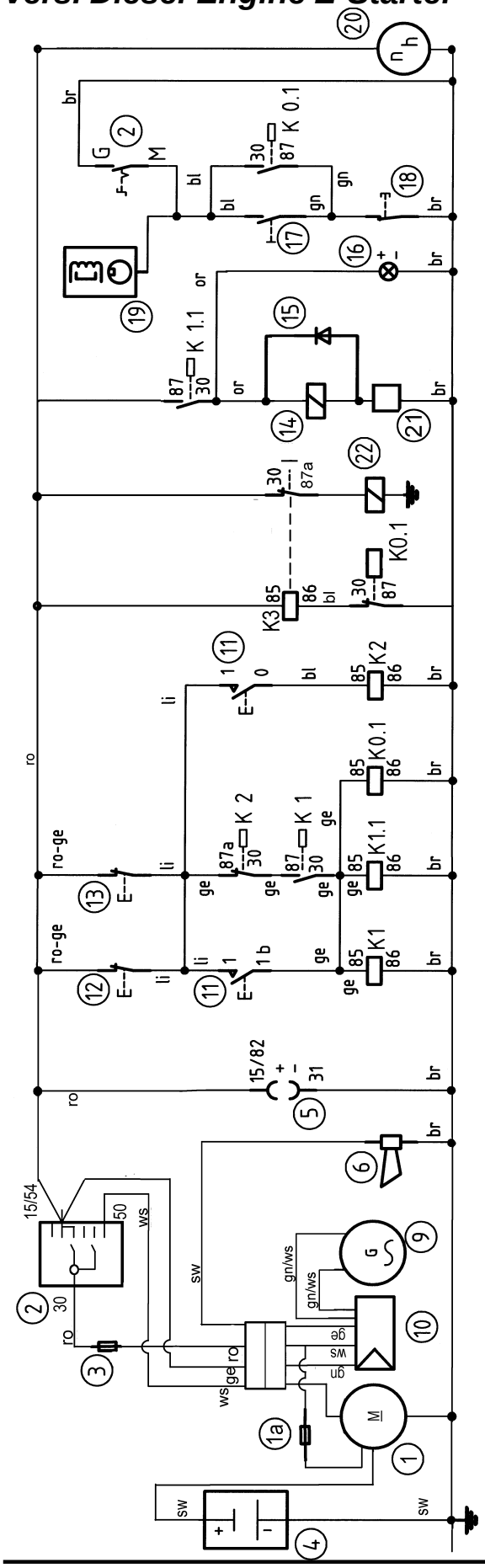


Version Petrol Engine E-Starter



bl = blue
br = brown
ge = yellow
gn = green
li = lilac
or = orange
ro = red
ro-ge = red-yellow

Vers. Diesel Engine E-Starter



1 Relais, E-Starter (only version E-Starter)
1a Glass fuse 15 A
2 Ignition start switch
3 Flat plug fuse 15 A
4 Battery (only version E-Starter)
5 Socket DIN 9680-A
6 Beeper (only version E-Starter)
7 Condenser (petrol engine vers. recoil starter)
8 Electric rectifier (petrol engine vers. E-Starter)
9 Generator 12V
10 Regulator
11 Switch, E-clutch
12 Contact switch, steering tower
13 Contact switch, driving lever left
14 Electromagnetic clutch
15 Diode
16 Signal light
17 Contact switch, driving lever right
18 Contact switch, safety lever
19 Magnet ignition system (petrol engine)
20 Operating hours counter/ tachometer
21 Modulate progressive starting
22 Stop valve, injection pump (diesel engine)

K0.1 - K3 = Relais

bl = blue
br = brown
ge = yellow
gn = green
li = lilac
or = orange
ro = red
ro-ge = red-yellow
sw = black
ws = white

Problem	Possible cause	Remedy		Page
Petrol Engine:				
Petrol engine does not start	Spark plug connector not connected	Connect spark plug connector		
	CHOKE is not operated	Set choke lever to position CHOKE		35
	Ignition lock not activated	Turn ignition key to „I“		35
	Driving speed lever not in position neutral	Set driving speed lever to „0“ neutral		35
	Fuel tank empty or poor fuel	Fill fresh fuel		33
	Fuel line clogged	Clean fuel line	✶	
	Defective spark plug	Clean, adjust or exchange spark plug		BM
	Engine too much fuel („flooded engine“)	Dry and clean spark plug and start at full throttle		BM
	Engine-off-line defective	Check line and connections	✶	
	Inleaked air due to loose caburetor and suction line	Tighten attachment bolts		
Misfirings in petrol engine	Engine running in CHOKE range	Set CHOKE to operating position		35
	Loose ignition cable	Firmly connect spark plug connector to ignition cable, fix ignition cable retaining device, firmly connect spark plug connector to spark plug		
	Clogged fuel line or poor fuel	Clean fuel line, fill fresh fuel	✶	33
	Vent opening in fuel tank cap clogged	Exchange fuel tank cap		
	Water or dirt in fuel system	Drain fuel and fill fresh fuel		
	Air filter clogged	Clean air filter or exchange		BM
	Carburetor misadjusted	Re-adjust carburetor		BM
Excessive tempeature in petrol engine	Low engine oil level	Refill oil immediately		43
	Impaired cooling	Clean cooling fan screen, clean internal cooling fins		44
	Air filter clogged	Clean air filter or exchange		BM
	Carburetor misadjusted	Re-adjust carburetor		BM
Misfirings in petrol engine at high speeds	Short firing intervals	Asjust spark plug		BM
	Incorrect idle mixture	Adjust carburetor		BM
Petrol engine frequently stalls in idle	Firing interval too long, defective spark plug	Adjust or replace spark plug		BM
	Carburetor misadjusted	Re-adjust carburetor		BM
	Air filter clogged	Clean air filter or exchange		BM
Petrol engine does not run smoothly	Speed control linkages clogged or jammed	Clean speed control linkages		BM
Petrol engine does not stop when set to stop	Defective engine-stop-line	Check line and connection	✶	
	Earth missing	Check ground contact	✶	
Petrol engine output too low	Air filter clogged	Clean air filter or exchange		BM
	Loose cylinder head or damaged gasket	Tighten cylinder head, exchange gasket	✶	
	Poor compression	Have engine checked	✶	

Problem	Possible cause	Remedy		Page
E-Start-Version				
E-Starter does not start	Battery is empty	Charge or replace the battery		49
	Fuse is defective	Replace fuse		32
	Harness, E-starter damaged	Check harness and E-starter	✶	
No warning signal sounds when engine stops	Ignition lock not activated	Turn ignition key to „I“		37
	Fuse is defective	Replace fuse		32
	Harness is damaged	Check harness	✶	
	Regulator is defective	Check regulator	✶	
Warning signal sounds during operation	Fuse is defective	Replace fuse		32
	Harness is damaged	Check harness	✶	
	Regulator is defective	Check regulator	✶	
Machine in General				
No wheel drive	Idle shift is operated	Activate hydraulic drive		24
Drive speed not regular	Hydraulic operation defective	Check and adjust cables and operating elements	✶	
Only moves in circles	Blockage in the steering operation by foreign bodies	Remove blockage on the steering handles and operating elements in the steering bar		26
PTO-drive cannot be engaged	Safety circuit not operated	Operate safety circuit		23
	Reverse drive switched in two-wheel tractor mode	Switch drive to neutral or forwards drive		24
	Fuse is defective	Replace fuse		32
	Electric switches defective	Check contact switches in the steering tower and driving speed lever, relay, cable connections and harness	✶	
	Electromagnetic clutch defektive	Check clutch	✶	
Excessive vibration	Loosened attachment bolts	Tighten attachment bolts		29, 53

✶ = *For this purpose contact your agria workshop!*
BM = see separate engie operating instructions

Problem	Possible cause	Remedy		Page
Diesel Engine:				
Engine does not start	- Speed control lever set to “STOP”	Move speed control lever to “Max”		39
	- Fuel tank empty or poor fuel	Fill fresh fuel		
	- Fuel line or fuel filter clogged	Clean fuel line or filter		47
	- Injector nozzle or injection line clogged	Clean injector nozzle or injection line	✶	48
	- Wrong injection pressure	Check pressure	✶	
Misfirings in engine	- Clogged fuel line or poor fuel	Clean fuel line,fill fresh fuel		
	- Vent opening in fuel tank cap clogged	Exchange fuel tank cap		
	- Water or dirt in fuel system	Drain fuel and fill fresh fuel		47
	- Air filter clogged	Clean air filter		46
	- Injector nozzle or injection line clogged	Clean injector nozzle or injection line	✶	48
Excessive temperature in engine	- Lack of engine oil	Refill engine oil immediately		45
	- Impaired cooling	Clean fan grid, clean internal cooling fins		48
Misfirings at high speeds	- Injector nozzle clogged	Clean injector nozzle	✶	48
	- Wrong injection pressure	Re-adjust injection pressure		
Engine frequently stalls in idle	- Air filter clogged	Clean air-filter		46
Engine does not stop when set to “STOP”	- Defective electrical cable, defective stop valve		✶	
Engine output too low	- Air filter clogged	Clean air-filter		46
	- Loose cylinder head or damaged gasket	Tighten cylinder head, exchange gasket	✶	
	- Poor compression	Have engine checked	✶	

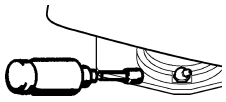
Problem	Possible cause	Remedy	Page
E-Start Version:			
E-starter does not start	*- Battery is empty*	*Charge or replace the battery*	*32*
	- Glass fuse is defective	*Replace glass fuse*	*32*
	- Harness, E-starter damaged	*Check harness and E-starter*	✶
No warning signal sounds with switched on ingnition and when engine stops	*- Beeper is defective*	*Replace beeper*	
	- Glass fuse is defective	*Replace glass fuse*	*32*
	- Harness is damaged	*Check harness*	✶
	- Regulator is defective	*Check regulator*	✶
Warning signal sounds during operation	*- Glass fuse is defective*	*Replace glass fuse*	*32*
	- Harness is damaged	*Check harness*	✶
	- Regulator is defective	*Check regulator*	✶
	- Generator is defective	*Check generator*	✶

✶ *= For this purpose contact your agria workshop!*

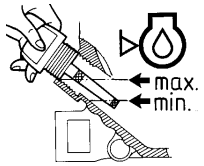
		P	A	After operating hours									J	B	page
				2	5	8	25	50	100	200	400	600			
Check safety circuit function		10	K												52
Check engine shut-off switch function		10	K												52
Check PTO-reverse drive lock		9	K												52
Check free play of levers			K												52
Check air filter	■		K												BM
Check air filter	◆		K												56
Clean cooling-screen	■	3	K		K										44
Clean cooling-screen	◆	3	K		K										48
Check bolts and nuts			K	K											54
Clean surrounding parts of exhaust	■	5	K		K										44
Clean surrounding parts of exhaust	◆	5	K		K										48
Check engine oil level, refill, if necessary	■	1	K			K									43
Check engine oil level, refill, if necessary	◆	1	K			K									45
Tighten wheel bolts and nuts		13	K	K											51
Check transmission oil level		17	K				K								50
Cleaning							K								52
First engine oil change, subsequent oil changes	■	2			W		W	W							43
First engine oil change, subsequent oil changes	◆	2			W		W	W							45
Clean air filter insert - earlier, if required	■	6						W							BM
Clean air filter insert - earlier, if required	◆	6						W							46
Retighten hex nuts of wheel hubs		11						W							51
First transmission oil filter change, subsequent filter changes		15						W		W					50
First transmission oil change subsequent oil changes		16						W				W			50
Clean fuel filter	■	7						W							BM
Clean spark plug, adjust electrode gap	■	8						K							BM
Replace spark plug	■	8							K						BM
Clean guide plates, cooling fins – earlier, if required		4							F				F		44
Replace air filter insert, earlier, if required	■	6								W					BM
Check hydraulic hoses										W			W		51
Check brake		14								F					51
Check wheel motors for straight driving										F					51
Exchange the fuel filter	◆										W				47
Replace air filter insert, earlier, if required	◆	6									K				46
Clean and check injection jet	◆										F				48
Clean carburetor and adjust	■										F				BM
Check engine compression	■										F				BM
Adjust valve clearance	■										F				BM
Clean cylinder head											F				BM
Grease steering tower drag bearing and ratchet bolt		18											K	K	53
Lubricate all sliding parts													K	K	53
Clean guide channels													K	K	53
Replace fuel hoses													W*		BM
Check battery															49

■ = *only petrol engine*
◆ = *only diesel engine*
BM= see separate engine operating instructions
P = Item in maintenance schedule (page 63 or 66)
A = Each time before you take up operation
B = After each cleaning, especially with a high-pressure cleaner
J = min. yearly
K = Checks and maintenance to be executed by operator
W = Maintenance to be executed by professional workshop
F = Maintenance should be carried out by your agria workshop
** = after 2 years*

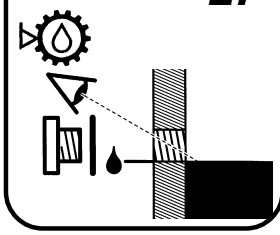
B 18



A; 8 h 1



25 h 17



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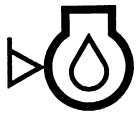
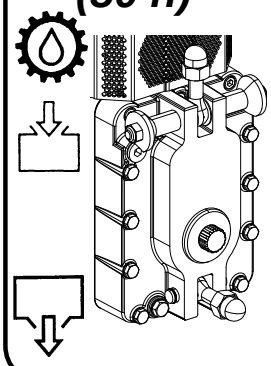


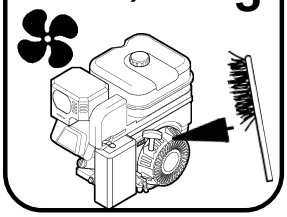
50 h (5 h)

600 h (50 h) 16



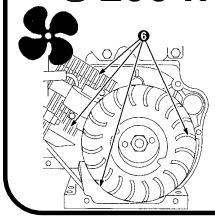
50 h; 200 h 6

A; 5 h 3

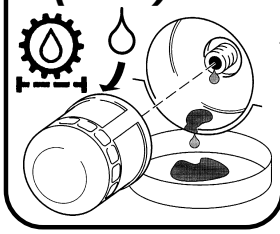


50 h 7

100 h 4

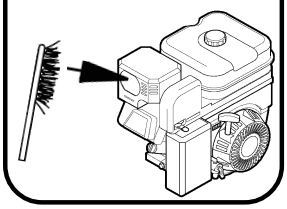


200 h (50 h) 15



50 h; 100 h 8

A; 5 h 5

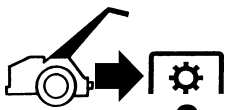


A; 200 h 14

A = *Each time before you take up operation*

B = *yearly and after each cleaning with a high-pressure cleaner*

A 9



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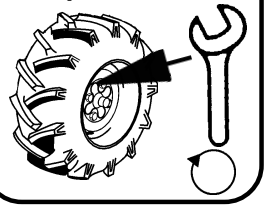
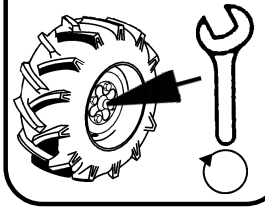
A; 2 h 13



A 12

50 h 11



A 10

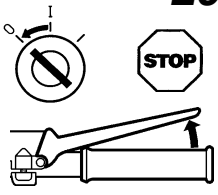
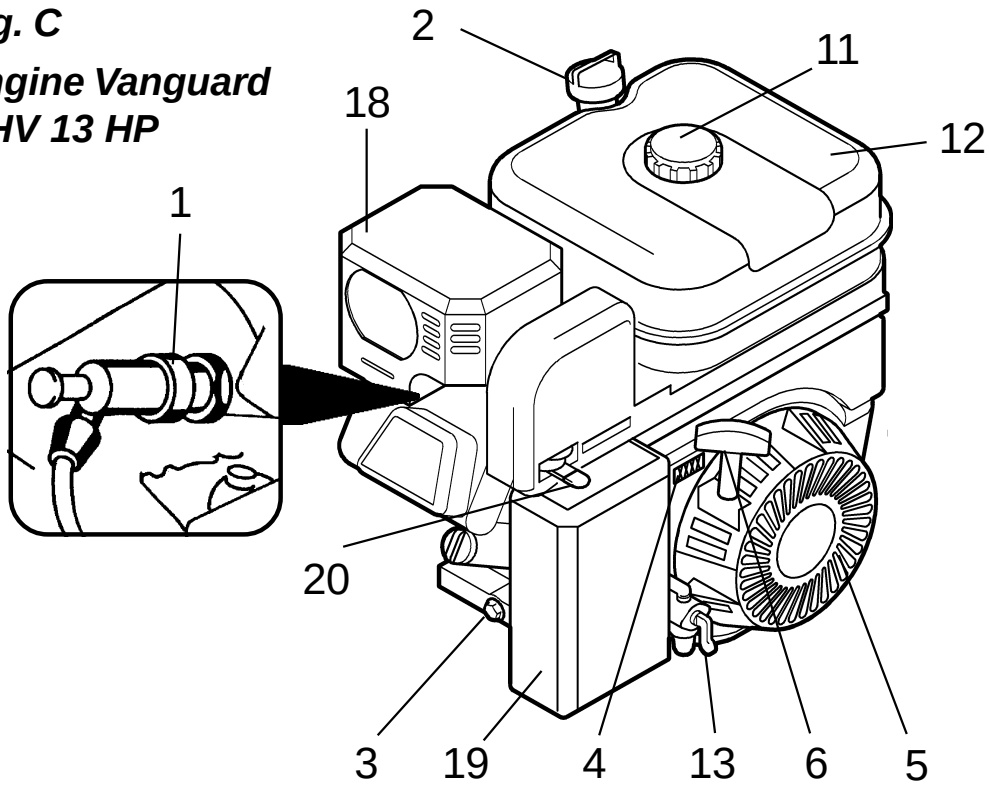


Fig. C

Engine Vanguard
OHV 13 HP

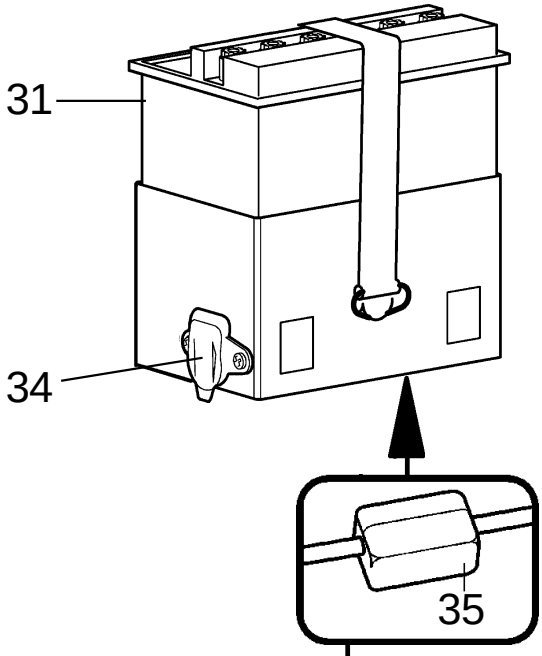


1 Spark plug/spark plug connector
2 Oil dip-stick/oil filling opening
3 Oil drain plug
4 Engine identification number
5 Recoil starter/cooling air screen
6 Starter handle
11 Fuel tank cap
12 Fuel tank
13 Fuel tap right
18 Muffler
19 Air filter
20 Choke lever
34 Socket 12 V - DIN 9680-A
35 Flat plug fuse

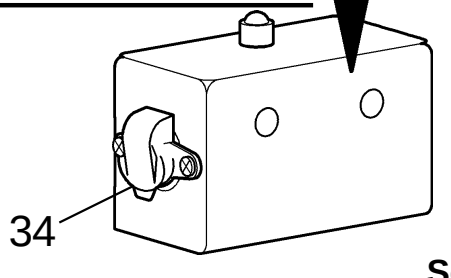
---

only for E-starter version:
31 Battery

Ausf. E.-Start

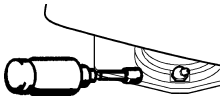


Socket for recoil starter version:

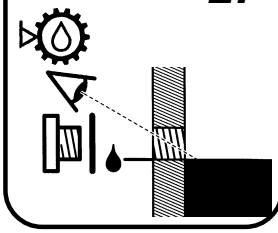


Socket
recoil starter version

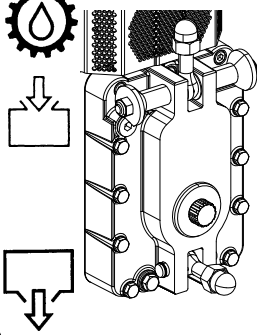
B 18



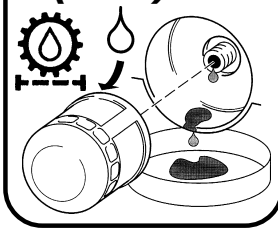
25 h 17



600 h (50 h) 16

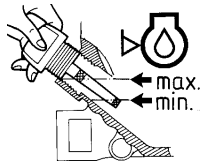


200 h (50 h) 15



A; 200 h 14

A; 8 h 1

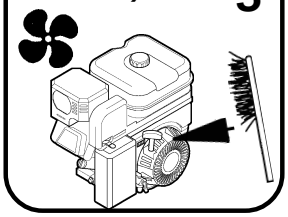


2

200h (50h)

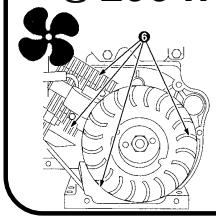
50 h; 6 3 Moh.

A; 5 h 3

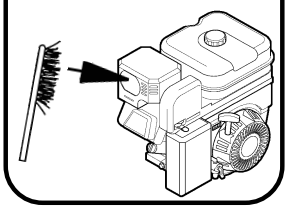


7 200h; J

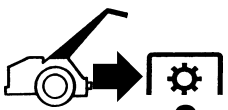
100 h 4



A; 5 h 5



A 9



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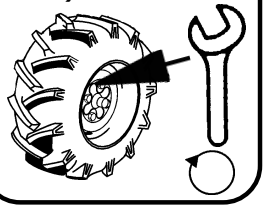
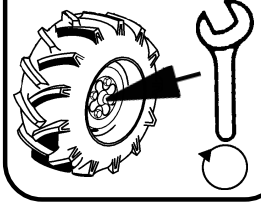
A; 2 h 13

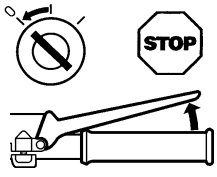


A 12

50 h 11



A 10



A = *Each time before you take up operation*

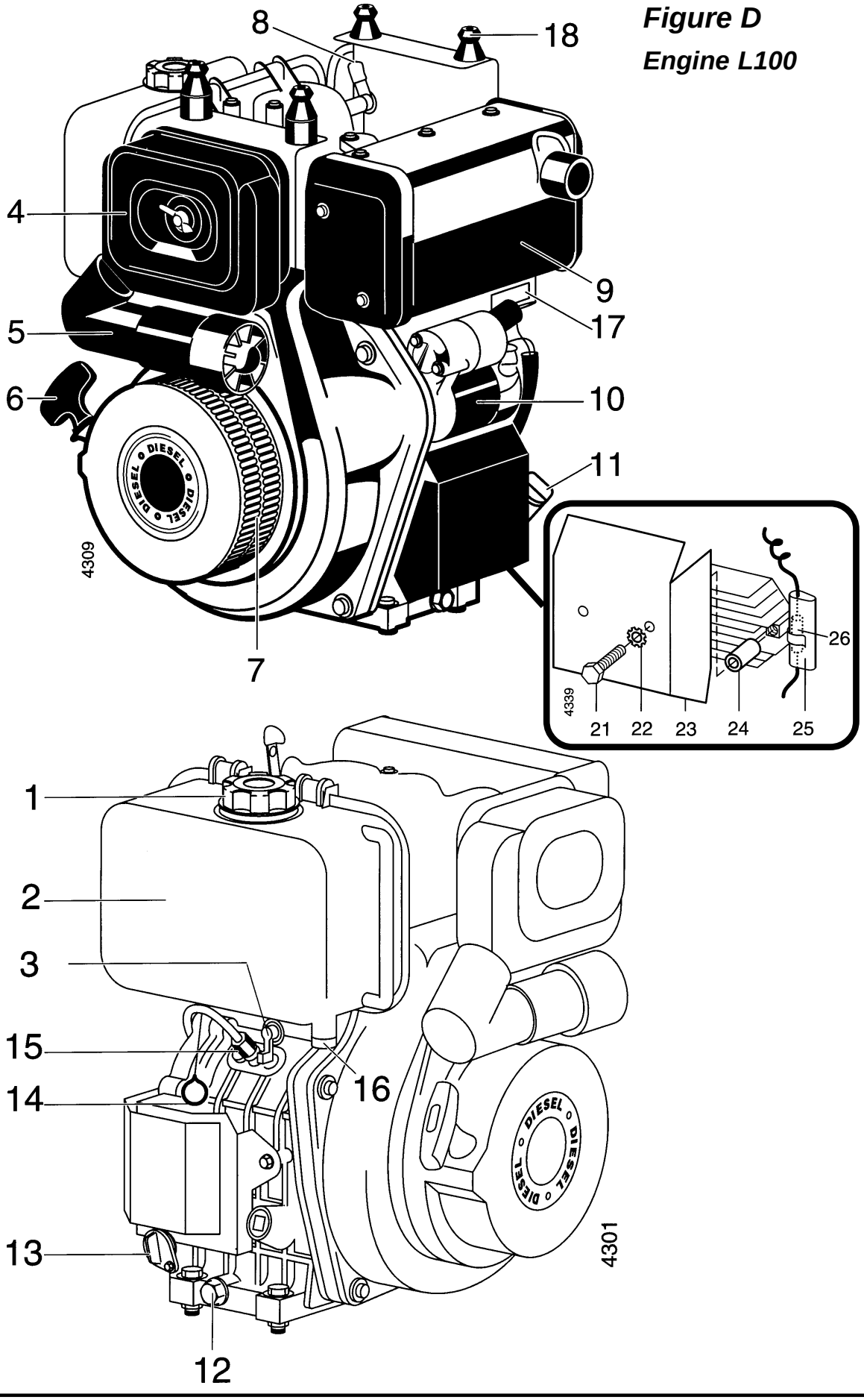
B = *yearly and after each cleaning with a high-pressure cleaner*

Figure D

Engine L100

1 Fuel tank cap
2 Fuel tank
3 Fuel tap
4 Air filter
5 Preliminary air filter
6 Starter grip
7 Cooling air grille
8 Decompression lever
9 Exhaust
10 Electric switch (E-Start Version)
11 Engine oil filler opening, dip-stick
12 Engine oil drain plug
13 Engine oil filter
14 Decompression cable
15 Injection pump
16 Fuel drain plug
17 Engine type plate; engine I.D.
18 Ball-head, engine cover
21 Hex head bolt (E-Start Version)
22 Serrated washer (E-Start Version)
23 Panel (E-Start Version)
24 Distancer (E-Start Version)
25 Fuse holder (E-Start Version)
26 Fuse 15 amps (E-Start Version)

Figure D
Engine L100



Conformity Declaration

agria

EG-Konformitätserklärung
EC Declaration of Conformity
CE Déclaration de conformité
EG conformiteitsverklaring

(D)	(F)	(GB)	(NL)
Wir	*Nous*	*We*	*Wij*

agria-Werke GmbH
Bittelbronner Str. 42
D-74219 Möckmühl/Württ.

erklären, dass das Produkt	*déclarons que le produit*	*herewith declare that the product*	*verklaren dat het produkt*
Einachstraktor	***Motoculteur***	***Two-wheeled tractor***	***Eenassige tractor***

2500 211, -221, 521

mit allen einschlägigen Bestimmungen der EG-Maschinenrichtlinie ***2006/42/EG*** *in Übereinstimmung ist.* *Die Maschine ist auch in Übereinstimmung mit allen einschlägigen Bestimmungen der folgenden EG-Richtlinien:* ***2004/108/EG, 2000/14/EG***	*est conforme à toutes les exigences respectives selon la directive relative aux machines* ***2006/42/CE.*** *La machine est aussi conforme à toutes les exigences respectives selon les directives CE suivantes:* ***2004/108/CE, 2000/14/CE***	*conforms to all relevant specifications of the Directive on Machinery* ***2006/42/EC.*** *It is also conform to all relevant specifications of following EC directives:* ***2004/108/EC, 2000/14/EC***	*voldoet aan de desbetreffende bepalingen van de EG-machinerichtlijn* ***2006/42/EG.*** *De machine voldoet ook aan de desbetreffende bepalingen van het volgende EG-richtlijnen:* ***2004/108/EG, 2000/14/EG***
Folgende harmonisierte Normen (oder Teile davon) oder techn. Spezifikationen wurden angewendet:	*Les normes harmonisées (ou extraits de celles ci) ou les spécifications techniques suivantes ont été appliquées:*	*Following harmonized standards (or parts of it) or technical specifications have been applied:*	*De volgende geharmoniseerde normen (of delen ervan) of technische specificaties werden toegepast:*

EN 709: 1997 + A1: 1999, EN 12733: 2001 + A1: 2009

Möckmühl, den 12.03.2010

Siegfried Arndt	*Rudolf Tigges*
Geschäftsführer	*Leiter Entwicklung & Konstruktion*
Directeur	*Responsable développement et études*
Managing Director	*Head, Research and Development*
Bedrijfsleider	*Hoofd ontwikkeling en constructie*

Herr Tigges ist bevollmächtigt die technischen Unterlagen zusammenzustellen.
Monsieur Tigges est habilité à agencer la documentation technique.
Mr. Tigges is authorized to assort the technical documents.
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